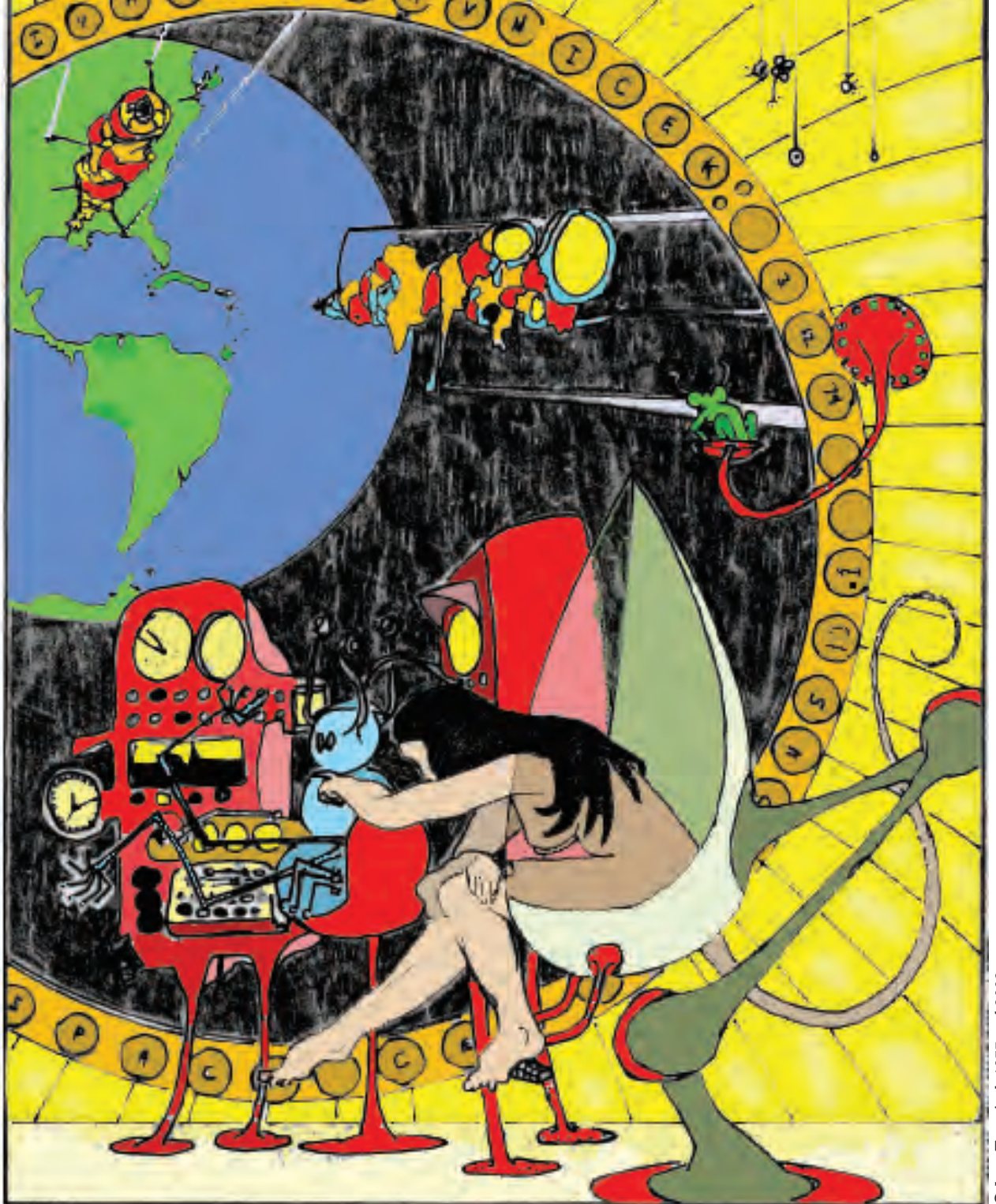


Space Centurions 10.6



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A Viviparan female taps a Hoptite on the carapace as their battlecruiser joins two Super Dreadnoughts in battle. A stoic It, on pedestal, endures the sublime madness.

Dedication

This book is dedicated to the people of Czechoslovakia who came to Nebraska in the nineteenth century, for it is they who settled the land that nurtured me and planted the flowers that caressed my soul with their beauty.

Space Centurions 10.0

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Chapter 0

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Homo Superior

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The Log of Homo Superior

The progress of the human race in the cosmic diary is largely filled with the entries of war and conquest. The greater the war the longer the entry and the greater the leap of human progress.

The Great Holocaust of 2026 is one of the most destructive entries in the human chapter and easily caused the greatest change to the human culture. Eighty per cent of the human race died and the remainder was seared in spirit. But scientific advances were great. Man finally turned with a single resolve toward the stars to escape the limited confines of his half-destroyed home.

The pressure to escape Earth compressed society into a rigid caste system and the final breakthrough in genetic manipulation – the dream of scientist and madman alike – made possible physical differentiation to suit both task and caste. Bits of genetic material, the nucleic acid DNA, had yielded to the scientific thrust even before The Great Holocaust and by 2130 human society had largely divided into three distinct groups: the vat grown clones who served as slaves and warriors, the ruling classes divided into nobles and priests, and the commoners who were condemned to preserve the gene pool unaltered.

Exploration of nearby stars became possible with the development of the first applications of suspended animation by the year 2650. But with the colonization of a few dozen stars it was here that human progress and conquest stalled. It was not possible to become a cohesive stellar empire with space ships caught in the vice of “real time.”

Society deteriorated. Constant genetic manipulation and the ennui of the spirit caused by the impenetrable vastness of space abraded the patina of civilization. The society of man became one of super science and Aztec barbarism. Knowledge and education became the privilege and refuge of a few and cruel animistic gods the lords of many. Wars became ritualized under elaborate codes of honor and much less expensive to mass numbers of people. Humanity, entered the second age of medieval honor laced with the poison of a religion oiled with sacrificial blood. It was an age that lasted more than 14,000 years among the loosely linked and pitifully few worlds colonized by mankind.

But a succession of events intersected just after the 170th century A.D. to give man the desire and tools with which to reach the depths of the galaxy. The puzzle of the multi-universe laws was solved, if not completely mastered. Suspended animation was perfected to allow essentially eternal preservation of biological organisms. Immortality elixirs became a privilege of the higher castes, allowing a life span limited only by the vagaries of war and fate. And in the year 17,030 A.D. a damaged starship with the remains of a humanoid crew was recovered from its decaying orbit around the erratic flickerings of a cepheid variable star. The odd starship's exotic “warp drive” engines opened the limitless vistas of the galaxy to the grasp of human greed. From the stone age village of a dozenfold colonized planets, man was suddenly presented with the modern metropolis of the entire galaxy.

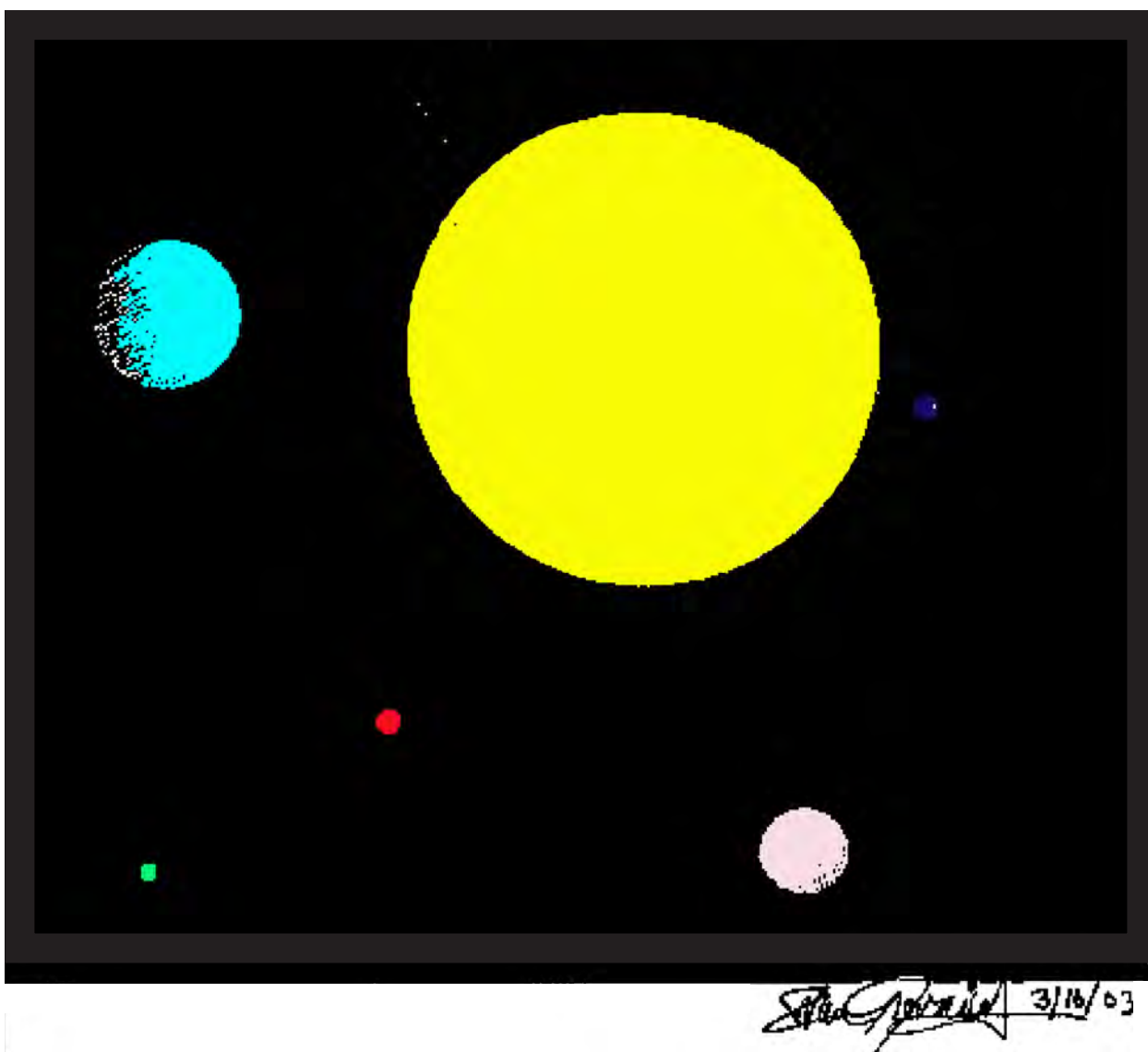
Teeming with orbiting bodies, almost every main sequence star was found to harbor life. Life that was seeded by the complex molecular compounds found in space dust, comets and asteroids. Some stars nurtured more than one planet or moon with life and many stars were doubles, triples or part of a small swarm. Most of the life forms found were not intelligent. A minority were semi-sentient. A meager few had true intelligence, but had not developed a significant civilization. A single intelligent race, known only as the Asohatra, or “Assoes,”

had used their advanced technology to reach the stars and made contact with man. They were utterly hostile.

The scattered outposts of man were forced to gather up their survivors in huge cargo ships. Surviving warships of the decimated space navies protected these ships as they fled the galaxy via a previously undiscovered p-brane for a safer home. The dimension into which they vanished is not known. Their destination is a mystery solved only by their arrival. The time of their arrival is unknowable, so the year in which they fled becomes the year of their resurrection.

Each cargo ship and its small escort of warships arrives at an orange star in a nameless galaxy that eventually comes to be called the Phive Phrogs Galaxy. Planets are colonized, factories are established, clones are manufactured and plans for colonizing nearby stars are made. Civilization and society have survived the swarming Assoes and man's own violent nature.

A hush falls upon the human stage. The expectant stars wink their silent siren song. Man sets aside his bow and arrow technology and gathers his resources. The year is 17,041 A.D. Homo Superior, the Space Centurion, is about to step into the nave of the infinite cathedral of the stars.



Homo Superior 17,041 A.D.

The perception of Homo Sapiens Superior is clear. The physical evolution is static, the social development complete. The life of the individual is less valuable than a group, a group less valuable than the race. For the privileged immortals life is eternal that ends only in accident or suicide. The mind is vastly more intelligent, the body more perfect, more sexually accentuated — if the evolutionary lessons of the last few million years are to be believed — and more efficient. Limb and organ regeneration is commonplace. An elite few alter their bodies into fanciful shapes to explore the frontiers of hedonism in their otherwise jaded existence. The chromosomes of life dance to a test tube song.

Homo Superior of 17,041 a.d. approaches the ideal. Of invariably exquisite good looks, the skin is brownish gold in color and covered with a coat of very finely textured hair not immediately obvious to the casual eye. Clothing becomes an encumbrance. Black hair covers the head and runs in a mane to the upper back. Easily the most striking feature is the prehensile tail that is longer than the body is tall. The tail has amazing dexterity and serves as a third hand. Also striking, but not so immediately apparent, are the feet, which have four long toes with a partially opposed “thumb.” The males are tall and muscular. The females, superbly buxom, have a startling feline grace and possess an unusual aesthetic symmetry. Eyes, peculiarly luminescent, range from gold to black and have an enhanced and broader range of sensitivity to light.

The DNA of man has grown vastly more complex through genetic engineering. The redesign effort created many types of mankind. Some are electronic intelligences who live in self-replicating robots. One branch has evolved so far it has disappeared, perhaps to become spirits in heaven. Mainstream mankind, despite its aberrations, remains biological.

Society of the 170th Century is divided into seven castes, at least for man of a biological nature, with only limited mobility for individuals to move from one caste to another. It is a miserable existence except for the privileged royalty.

The **Oala-Uinsil** are the high nobility and are headed by the three Roa, or kings. The Roa are the supreme rulers of the human race and all its subjects. The caste is made up of the supreme Roa, the three sub-Roa ruling each planet, and all their blood relations, even those some distance removed. The total population of the caste makes up only a fraction of one per cent of the human race. Each Oala-Uinsil owns several hundred slaves, which wait on them hand, tail and foot.

The **Oala-Tek** are the low nobles and comprise about two per cent of humanity. They provide all the military and governmental leadership below the Roa, but above the commoners and warrior clones. Aside from the medical and genetic sciences dominated by the Kaminvoo, the Oala-Tek produce all the scientists, mathematicians, artists, musicians, philosophers and teachers in society.

The **Rein-M'tuh** are a sub-caste of the low nobles and become members only by the accident of birth. Members of the caste are much respected because of their extra-sensory mental powers. Even with the most advanced genetic engineering, such mental powers remain a rare accident. There are only a few hundred Rein-M'tuh and all possess some combination of the powers of telepathy, psychokinesis, levitation, telesthesia and clairvoyance. Members of this caste are used for all communication involving interstellar distances.

The **Kaminvoo** are the priest caste, which controls the secret of immortality dispensed only to the two castes of nobility, the Kaminvoo themselves and the sub-caste of Rein-M'tuh. All medical science and healing is dispensed by members of the Kaminvoo, making the caste little less influential than the Oala-Uinsil. A Kaminvoo is recognizable by the multi-colored tatoos covering the entire body in lieu of clothing. The Kaminvoo are always young males elevated from the commoner caste and make up less than one per cent of the human race. The caste is in charge of the embryo banks and the cloning vats, making them the fathers of sudden population expansion forced by the pressures of war or colonization. It is odd that members of the Kaminvoo have such a central role in reproduction because half the members are homosexuals, perverts or pedophiles.

The **Tori-Tor** Caste provides all the manpower for the military and police forces below the officer ranks. All members are androgynous clones incapable of sexual reproduction. They have a short life span because the process is imperfect and after just four years a sudden deterioration sets in that proves fatal in only a few days. A completed clone is created in less than a year in a factory called a cloning vat. All necessary knowledge and experience is programmed during and just after the latter stages of vat growth. Clones are created to only about a thousand patterns, each of superb mind and physique. Each pattern is peculiarly adapted to the task for which it is created, and each is identified by a feminine name: Zinnia, Loralie, Chloe, Adeline, Beulah, etc., followed by a two-digit numeric used to differentiate one Adeline from another when more than one of a particular variety is present. Ground combat troops are an exception in that they are given male names such as Bruno, Thud, Garch and Stud.

The Tori-Tor are recognizable by the lack of a navel and sexual characteristics. Aberrations in the cloning process may sometimes produce deformities and the clone is revatted prior to completion. Occasionally, an aberration might prove so successful that a master chromosomal pattern will be made and used as a model for future clones of the improved type. Thus was born the term "evolution in a vat."

The **Tom-Pan-Tli** Caste is the caste of commoners and comprises about half of humanity. Caste members enjoy none of the benefits of immortality, leaving them with a life span little exceeding 80 years. This caste is preserved not just to run the factories and participate in other aspects of the economy, but to maintain a legacy gene pool. Tom-Pan-Tli members are the original man as once known on Earth before genetic manipulation became pervasive. A Tom-Pan-Tli has only two escapes from his caste. A young male may apply to become a Kaminvoo or members of either sex may apply to become a scientific researcher by exceptional brilliance of mind.

The **Bou-Bo** are the choptail slaves and lead a miserable existence devoid of hope or many years. They are sterile male clones made to a few dozen patterns. The patterns are generally bestial: arms are longer than normal and the legs shorter, which allows their usual knuckles-and-feet anthropoidal gait. The tail is amputated in adulthood to a useless foot-long stump. Depending upon the mood of the gods, hundreds may be sacrificed in appeasement by the Kaminvoo.

Military ranks are based off ancient naval ranks and have repetitious sounding names when pronounced in the language of Homo Superior. Those ranks and their approximate equivalents are Kai-Malasea (fleet admiral), Jai-Malasea (admiral), Kai-Mala (vice admiral), Jai-Mala (rear admiral), Ka-Anoha (captain), Ja-Anoha (commander), Ka-Ano (lieutenant

commander), Ja-Ano (lieutenant) and Ka-Ja (ensign). Rectangular pendants suspended around the neck are made of rare metals and are pierced by square or rectangular holes, the numbers, sizes and shapes of those holes signifying the rank of the bearer. Tattoos of the same design are also worn on the left shoulder blade. The Tori-Tor wear similar pendants, but each is triangular, smaller and painted in a variety of colors.

Warp Drive

All interstellar travel is based off the Kerr-Reissner-Nordstrom solutions, or kerning, of the many-universe laws. But first, it must be understood that there are five types of time: **coordinate time**, that kept by the “Master Clock” of the human race at an earth-like planet circling a white dwarf star near the edge of the galaxy; **proper time**, which is that recorded on board a ship, **reverse time** where events precede cause; and **alternate time**, which is found in alternate universes and runs at speeds faster or slower than coordinate time. There also is **inexplicable time**, but as the name suggests, theorists have yet to develop either an explanation or an understanding of it.

A ship using warp drive first enters pre-warp, a ghost-like status where a ship enhances the time/space distortions of extreme gravity to the point where the ship itself becomes a tiny black hole and evaporates. The ship then passes into another universe, of which there are an infinite number. By precise calculations of the time loop, it is possible to re-enter the universe from which it came one year after departure, which is the safe minimum.

The one-year delay is set by custom forced by necessity. Re-entry to the universe from which a ship came at a date prior to departure changes a ship to anti-matter, which is totally antithetical to any form of “real” matter. The paradoxes of arrival before departure alone would be unsolvable, but the cataclysmic aversion that matter holds for anti-matter make the paradoxes more philosophical than real.

The consumption of ship-board proper time during each warp jump is prodigious, however. Proper time consumption is a multiple of 1,100 years times the distance moved in multiples of parsecs. One parsec (3.26 light years) is the smallest unit on the star chart. For example, if a ship is to move four star chart squares (4 parsecs or about 13 light years) it will spend $4 \times 1,100$ or 4,400 years in an alternate universe. The “fastest” ship can travel 10 star squares (10 parsecs) per warp, which consumes 11,000 years of proper time.

Life must be preserved on a ship that might consume as much as 11,000 years of proper time per jump and hundreds of thousands of years during the ship’s service life. Such long periods of time mean that the life preservation equipment necessary for suspended animation will consume large amounts of energy, a precious commodity on a space ship. Energy consumed is a function of the number of persons preserved multiplied by time. The number of persons preserved increases with the size and/or costliness of a ship. The “speed” of a ship is really limited by the ability to preserve itself and its crew through the millenia.

The cloned crew becomes an expendable commodity. It is cheaper to recreate than to preserve. So with each warp jump, the present crew is confined to a special section of a ship, called the Methuselah Chamber, and left to die comfortably at the advanced age of 4 years. When a ship approaches its destination to within a year of ship-time, automatic machinery clones a whole new crew, fresh out of the vat.

This procedure leads to a number of strange events; for example, a warship that warps many times from star to star during the course of its life consumes only a few years of “Master Clock” time, and many thousands of years of ship-borne proper time. The captain and executive officer are placed in suspended animation and will experience only the “Master Clock” time even though their bodies exist for the same thousands of years the ship does. A ship may have hundreds of complete crews cloned, one crew for each time the ship warps into synchronization with the “Master Clock,” hence the term warping in.

A clone crew always is made up of the same basic types. An entire crew might be made up of only a few types of clone repeated over and over for each warp jump. Type Adeline might make up the engines crew. Type Beulah might belong to the astro-navigation crew and Type Clementine to a particular weapon system. If a particular type of tactical situation is expected at the end of a warp jump, dozens of one type of clone best suited for that situation will be created.

The experience of previous clones of a type who have served the ship between prior warp jumps is preserved on osmium-alloy ribbons and programmed into new clones of that type. Each clone will possess an enormously rich life experience, although the mind possessing it is only of transitory existence. Each clone might have an operational career of only a few days, sandwiched between warp jumps. Immediately after a ship begins a warp jump and the minds and memories of the clones recorded, the clones are euthanized. A clone will spend its short life with a memory of many short periods of duty, but none of dying. The biological remains of a dead clone are eviscerated, distilled and stored.

When a ship visits any civilized planet all the osmium memory ribbons for each clone type are transcribed, after editing to eliminate the mundane, into a library retained for shipboard use. A new and updated memory ribbon is then available for each new clone. By this method libraries and clones become a history of the travels of many ships of the empire and of many clones. A massive fund of starfaring experience becomes the trust of each living clone.

There is no tomorrow because tomorrow is forever. There is only the past preserved on osmium ribbons.

Genesis

Varying amounts of credit for the development and playtesting of the first eight versions of Space Centurions go to: John Koning (deceased), Stan Wrobel, John Smythe and his brother Jim, and David Cozad, all of the Youngstown, Ohio, vicinity; Mike Rocamora, Edi Birsan and Bob Komada of New York City; my cousin, John Beranek of Morse Bluff, Nebr., a fellow dreamer for decades; Richard Giberson, Bob Barton and Walter Brink, all of Amarillo, Texas; Kenneth G. Ray and his friends when he was living in Santa Monica, Calif.; and Stuart Long, a one-time fellow copy editor at The Lincoln Star newspaper in Lincoln, Nebr.

Space Centurions 9.1 is largely my own work helped along with brainstorming sessions with John Beranek and John Smythe.

SC I was a face-to face (FTF) game developed and played in 1969 and 1970 as a reaction to the self-imagined inadequacies of a game called “Lensman.” SC II was an abortive play-by-mail (PBM) game developed in 1970. SC III was an expansion of SC II and was

printed in the January 1971 issue of Spartan International magazine. Many modifications were made as the result of further playtesting beginning in April 1971, leading to the creation of SG IV. SC III and SC IV overworked the referee to such an extent as to be nearly unplayable. An early version of SC V was printed by Spartan International in the Winter 1972 "Spartan Simulation Gaming Journal." Further playtesting and development led to the final version of SC V published in 1974 by Spartan International. SC V was successful and was played by various groups around the country.

SC 6 was a radical adjustment of SC V to lessen the work load on the referee. Moves were limited to only one week per mailing cycle and the map was shrunk to 40 X 40 star squares. The game was limited and unimaginative in the author's view, and a test game was ended after one of the four players vanished after only three mailing cycles had been completed. The player evidently shared the referee's feelings about the game!

SC VII was begun about 10 January 1974. The rules were generally complete by the end of 1976. SC VII was basically SC V with the addition of more galactic features and numerous small adjustments to the rules. Although the game was an improvement over SC V it still had the fault of overworking the referee.

SC VIII was an expansion, modification and complete rewrite of SC VII to incorporate lessons learned during extensive play testing. Preliminary work began in October 1975, final drafting began in July 1976. SC VIII greatly expanded the diversity of celestial hazards, modified the ships chart and increased costs. The economic system was adjusted and star output changed. To cut the referee work load, a severe cost was placed on moving fleets. The size of the map was quadrupled to magnify the problems of interstellar distances. Space Centurions VIII lapsed into obscurity by the end of 1980.

The 22-year somnolence of SC VIII saw the rise of computer games and the near demise of board and PBM games on the North American continent. Society's increasing emphasis on family activities and togetherness early in the 21st century have fostered a resurgence of board games. Then one day this old man, creaky of joint, rheumy of eye, arthritic, half deaf, half bald and possessed of the multitudinous debilitating effects of old age, reached with trembling hands toward a low shelf where resided the SC VIII rule book and its rotting pages.

Space Centurions 9.0 was a massive transformation of the game into something easily playable FTF by two or more players or PBM by any number of players. It was felt that *all* the limitations that once fettered this game were solved with the spring 2002 rewrite. The size of the map was reduced to a manageable scope and depicts just a tiny portion of a galaxy instead of a galaxy as a whole. Some degree of three-dimensionality was introduced to the star chart by the creation of a crazy-angles interconnectedness of the various map sections that results in an assemblage that might be likened to a Calder mobile. The number of stars was 820. The number of moving fleets was reduced to a manageable size by requiring players to build expensive mining ships to gather warp juice, which is a rare and limited commodity. Some new economic concepts are introduced.

Space Centurions 10.0 was another major revision, this time limited to a huge expansion and revision of the economic structure of the game. This rewrite was done in March 2003. A new map with approximately 1000 stars was created and many more color illustrations were added. It is expected that this version will complete beta testing in 2003.

Chapter 1

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Starting a Game

•

The Blight of the Fumblebee

Your small fleet is all that remains of a puny stellar empire. Your home star is a burning clinker that smudges its solar system with the smoky embers of your race's dreams and aspirations. The dozen habitable planets that once made up your insignificant empire have been effortlessly assimilated by hostile alien hordes that descended upon your hapless citizens like the 77 hobgoblins from hell.

From the shattered remains of defeat, you managed to gather the surviving members of your race. Your ships fled at best speed away from the ruins of your past. Your astrogators found a p brane near a microquasar's black hole, which transported your fleet intact into another time, into another galaxy and into another of the infinity of dimensions. There is no way to determine if your fleet is just one gluon away from its origin or if it is lost in time a quadrillion light years away and 900 quintillion dimensions removed from the time you last set your clock. The way home is lost; your glory is gone forever. There is only the future in a distant galaxy.

Your astronomers have examined nearby stars. Out of what appears to be an unusually hostile galactic environment, they have determined that a virtually invisible nomadic planet ejected from a nearby solar system may be habitable because it is heated by radioactive decay and volcanic activity. Your astrogators have assured you that they have plotted a safe course for this unnamed planet that is just now settling into orbit around a yellow main sequence star that is part of a multiple-star system. This planet holds the future of your race, for your equipment and resources will not allow a second chance to travel to another star. You are incredibly fortunate that this planet is an untouched utopia, a veritable paradise and a heaven-like haven for your woebegotten race. God frowns as you begin to despoil this new eden.

Initial Placement

Your 8 ships (pages 87 and 88) and 8 factories (page 58) are placed at your home star:
 8/GOV.0 (Governmental infrastructure, financial assets; speed 8 is a lost technology)
 8/CS.1 (flagship; speed 8 is a lost technology)
 6/FR.2
 6/GA.3
 6/CU.4
 6/CU.5
 6/A.6 (People, 8 factories, art and 1 GU – all required to establish initial home star)
 6/D.7 (2 GU available to begin colonization)
 8/D.8 (People, 2 TA-33 RU, libraries and miscellaneous flotsam)
 1024 MT balance at IMLO Bank (see page 57 Megatons and page 108 TA-10 IMLO).

Note that speed 8 is a lost science, although it survives as a baffling technology on 3 ships. TAs 96, 97, 98 and 99 must be developed to build new ships of speed 7, 8, 9 or 10.

An empire produces enough warp juice to power 4 fleets without the need of TA-100 Warp Juice Mining Module (page 126).

Other players in this game come from the same home star you do. The various factions of your contentious race's survivors loathe each other and have split up resources and have headed for a planet similar to yours, but at another location. The split came about because it was thought that it would be better to commit fratricidal suicide later rather than sooner.

How to Start a Game

The approximate order of steps for a player to start a game are:

1. Read rules.
2. Proceed to step 3 or toss rule book into the trash.
3. Assemble map using pages 18 - 43.
4. Find one or more opponents.
5. **First Cycom.** Name your empire. Look up meaning of Cycom, top of page 57.
6. Each player selects and names his home star (page 49, Multiple stars – home stars).
7. Each player places Pirate Empires (page 52), Amphibian Empires (page 53), Xenophobiacs (page 54) and Plague Planets (page 50) on the star chart. Place list of these hazards (page 67) in heavily sealed envelope and provide to each player for proof of honesty after game is completed.
8. Generate first Cycom, which entails:
 - a. Make income charts (pages 60, 61), which show nothing until end of first Cycom.
 - b. Make expenses chart (page 62). Don't forget starting balance of 256 MT.
 - c. Decide which TAs (starting on page 100) to purchase, which advisedly should be very expensive ones for the first few Cycoms because top priority is to increase MT income through colonization (page 57, Megatons and Goodie Units).
 - d. Move one or more fleets to explore nearby stars (page 71, Navigation). Visit Main Sequence and Red and White Dwarf stars of interest because others stars require a ship to have 1 or more deflectors (see Group III TAs Deflectors, page 147 and Cosmology page 45).
 - e. Provide list of warp ins to all other players (pages 65 Warp Ripple Reports and 72 Warp Ripples).
 - f. Start filling out fleet inventory record (page 63).
9. All players exchange warp ripple reports (page 65).
10. Each player tells all other players of contacts and of losses to hazards.
11. Plot strategy for next Cycom, which entails:
12. **Second Cycom.** Repeat steps 8 - 12, except that a player will have MT carryover income from the home star. Use gamestart MT and MT income for GU purchases to propel your tiny colonization effort. Identify Main Sequence star for development into production center. Develop near term strategy for TA development.
13. **Third Cycom.** As before, but now a player will have carryover income from 1-MT stars colonized during the second Cycom, as well as carryover income from the home star. Use MT for GU purchases and factories for second production center. Be aware that bulk of first Katun of game will be colonization, development and exploration.
14. **Subsequent Early Cycoms.** Important TAs are: TA-1 must join before end of 1st Katun, Group III Deflector TAs, TA-10 must join before end of 1st Katun, TA-12, TA-30 available after hostilities begin, TA-100 needed to warp move fifth and subsequent fleets and TAs for faster ships, larger ships, Dead Dwarf development and the variety of mining ships used to increase production. TAs 146 and 147 Archaeology Ships are a pressing priority.

Chapter 2



The Maps



Cosmology

Blue Supergiants: 8

Red Supergiants: 8

Blue Giants: 8

Red Giants: 8

Main Sequence: 360

T Tauri Stars: Common adjacent to or in
gas clouds

Protostars: Very common adjacent to or in gas clouds

White Dwarfs: Common

Red Dwarfs: Common

Dead Dwarfs: 26

Pulsars: 9

Neutron Stars: 6

Magnetars: 6

Multiple Stars: 82, but far fewer than in a real galaxy

Blue Supergiant



Red Supergiant



Blue Giant



Red Giant



Main Sequence, Yellow



T Tauri Stars



Protostars



White Dwarf



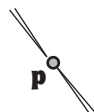
Red Dwarf



Dead Dwarf



Pulsar



Neutron Star



Magnetar



Gallery of Multiple Stars



Sextuple



Quadruple



Trinary



Binary



Pen-



Quadruple



Trinary



Binary



Trinary

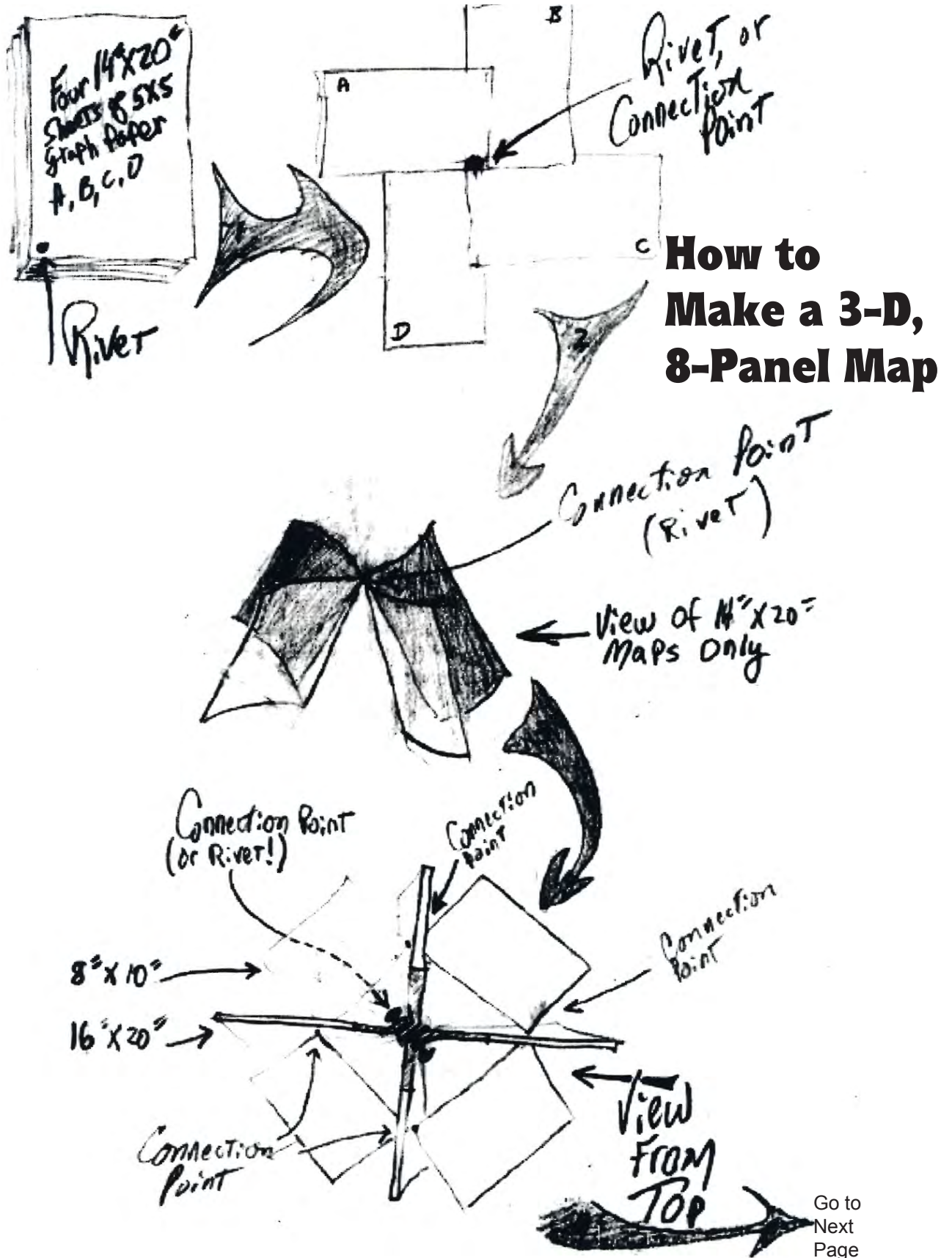


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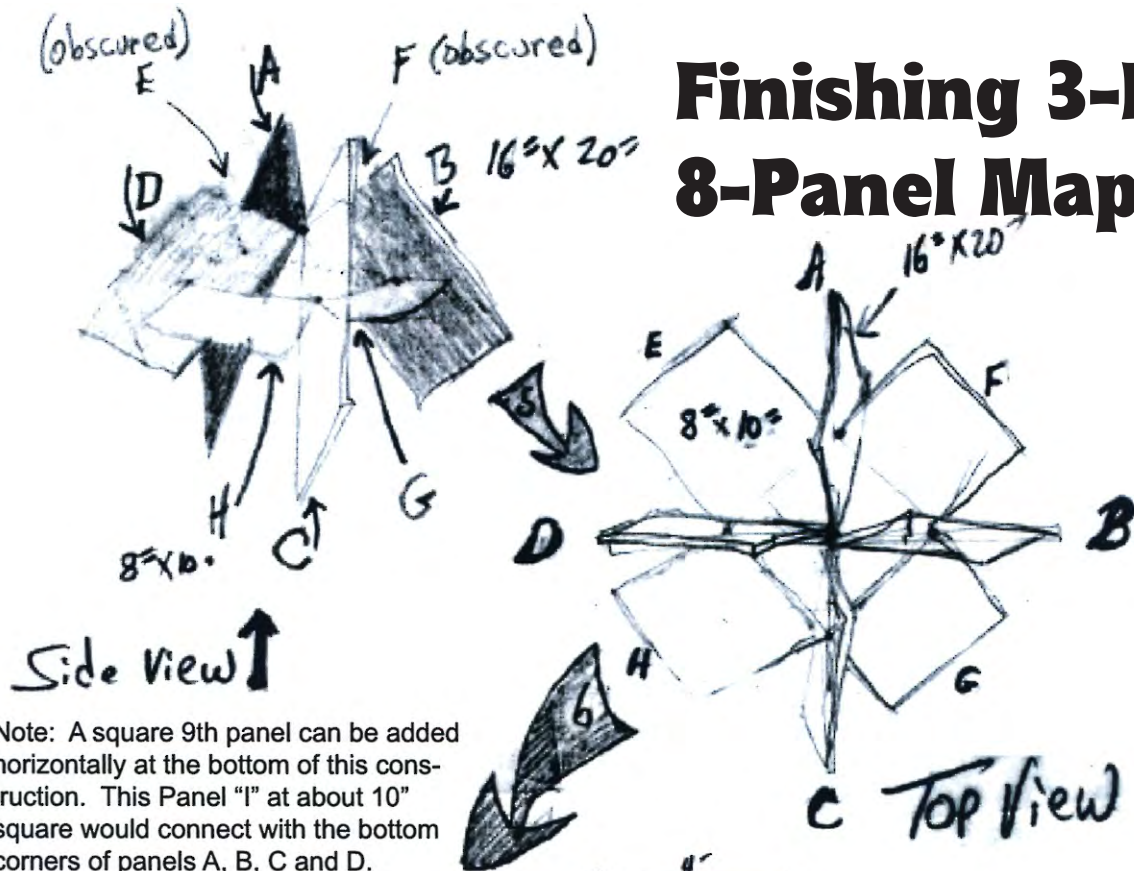


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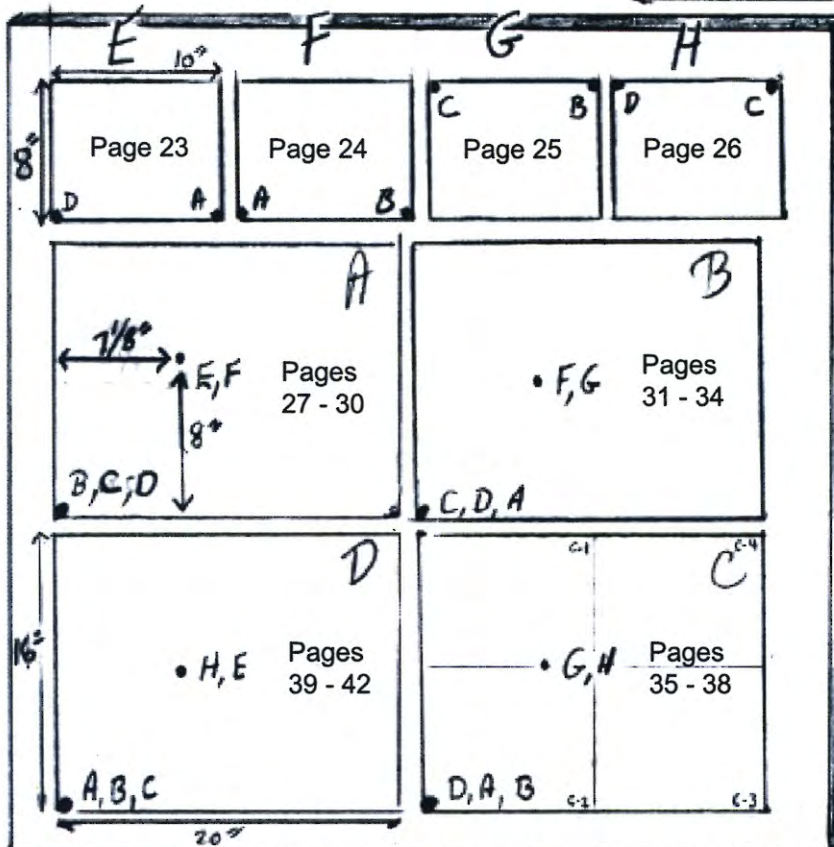
Stars are located and identified
by their map coordinates; e.g.,
E-18H (map section followed
by coordinates).



Finishing 3-D, 8-Panel Map



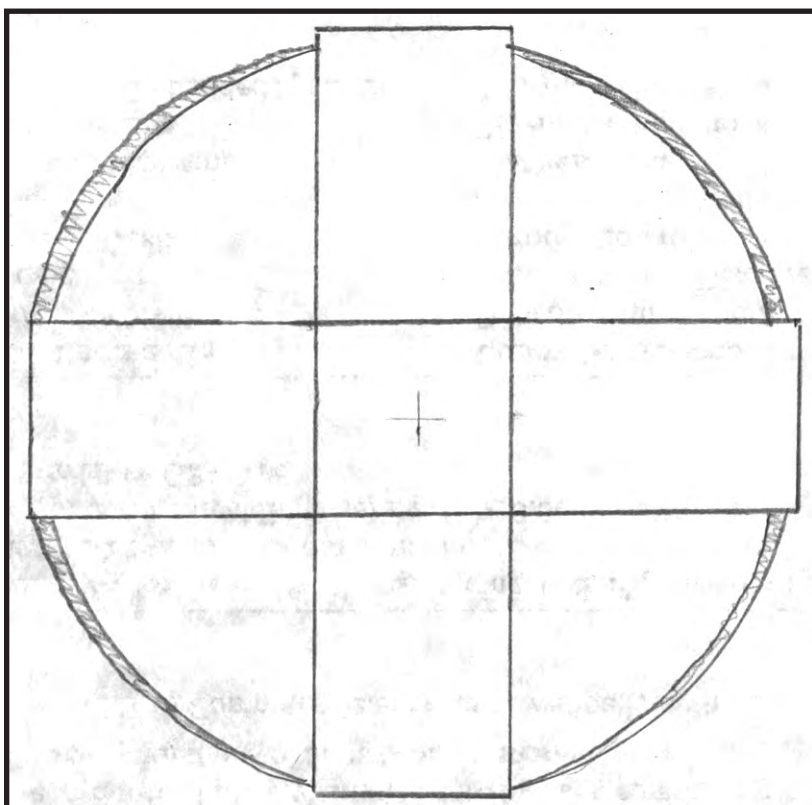
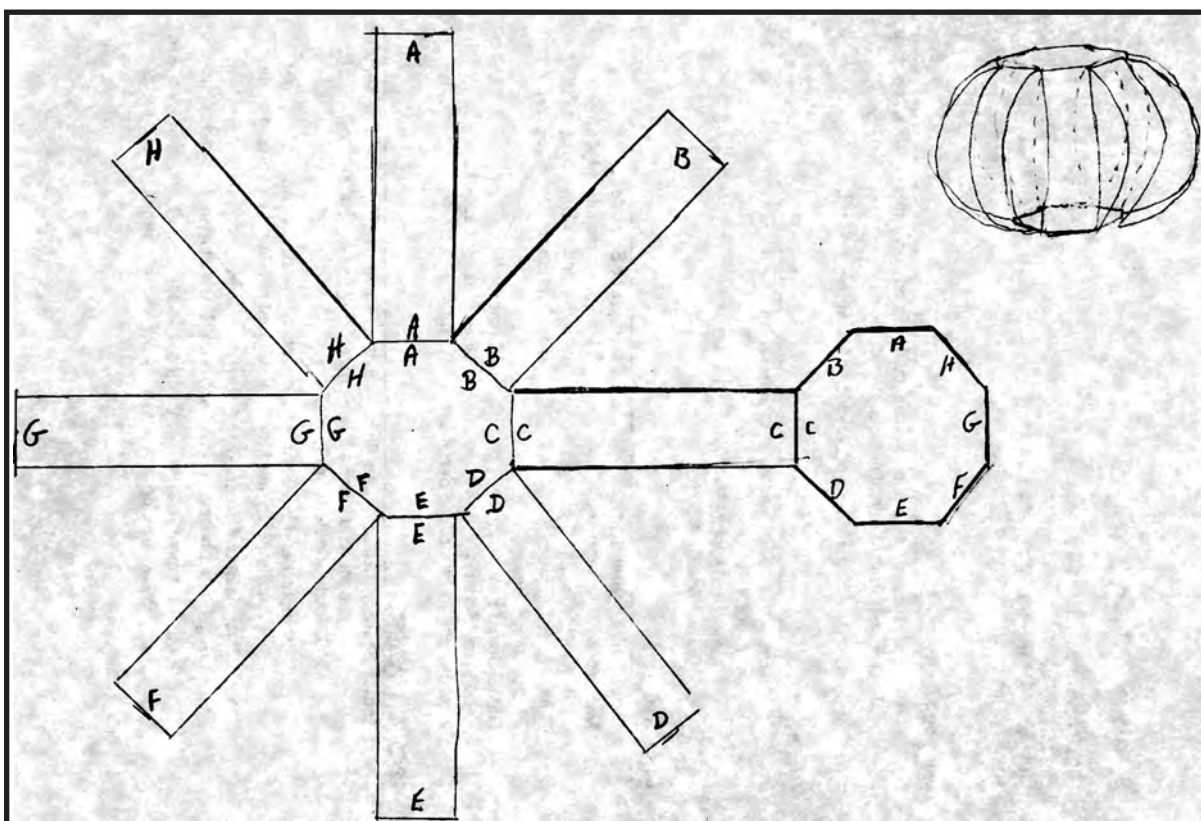
Note: A square 9th panel can be added horizontally at the bottom of this construction. This Panel "I" at about 10" square would connect with the bottom corners of panels A, B, C and D.



Drawing Shows
Where Connection
Points Lead.
Player has Choice
Of Destination.

Mount 8 Maps on
4' x 4' Chunk of
Bulletin-Board Material

How to Configure Your Own Map



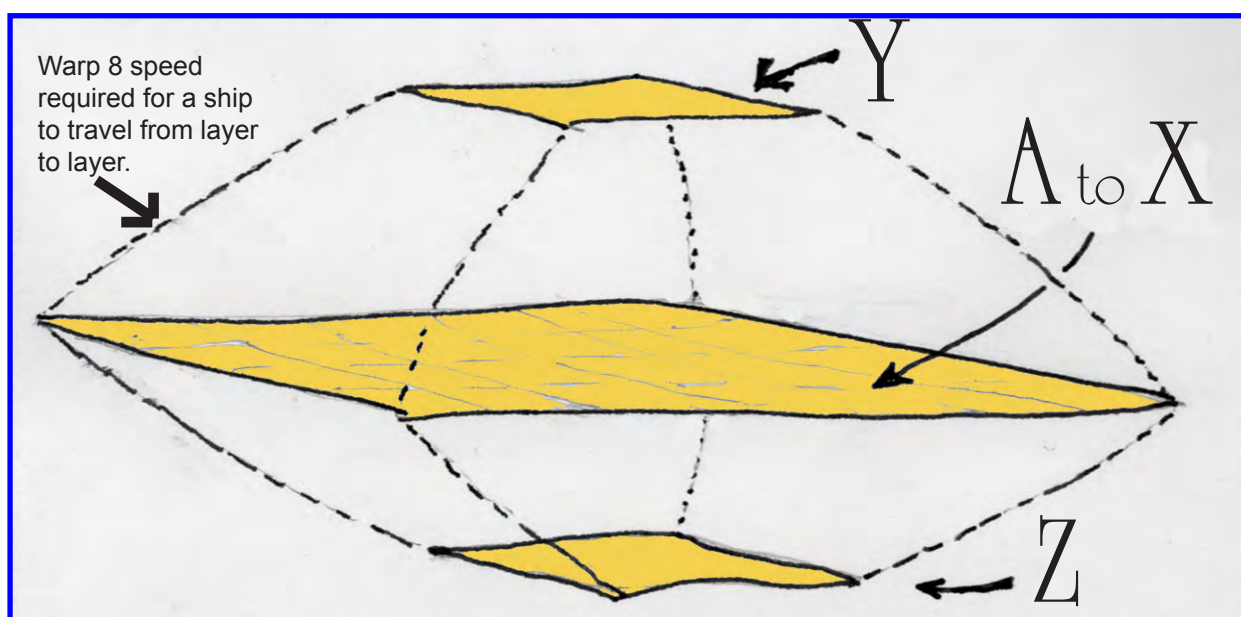
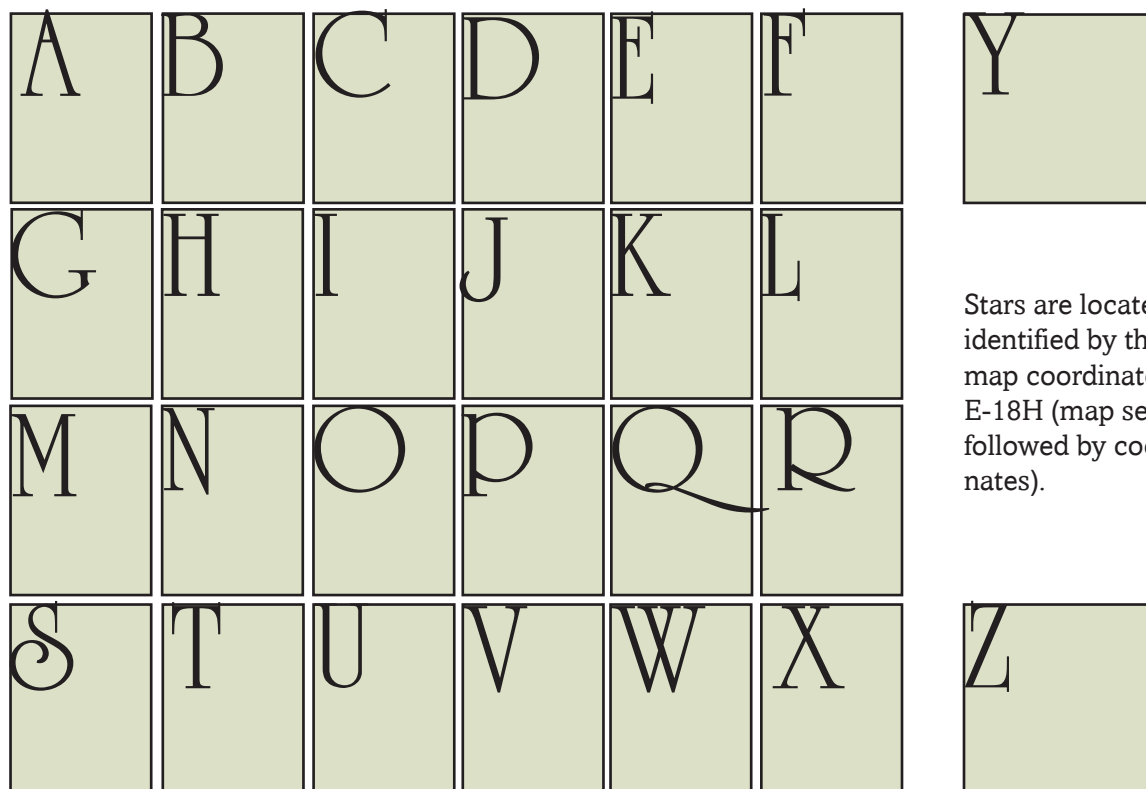
The drawing above depicts a 10-panel map assembled into a pumpkin shape. The 8 long panels, A, B, C, D, E, F, G, H connect with the 2 flat octagons, as shown at upper right. The net effect is that of a globe.

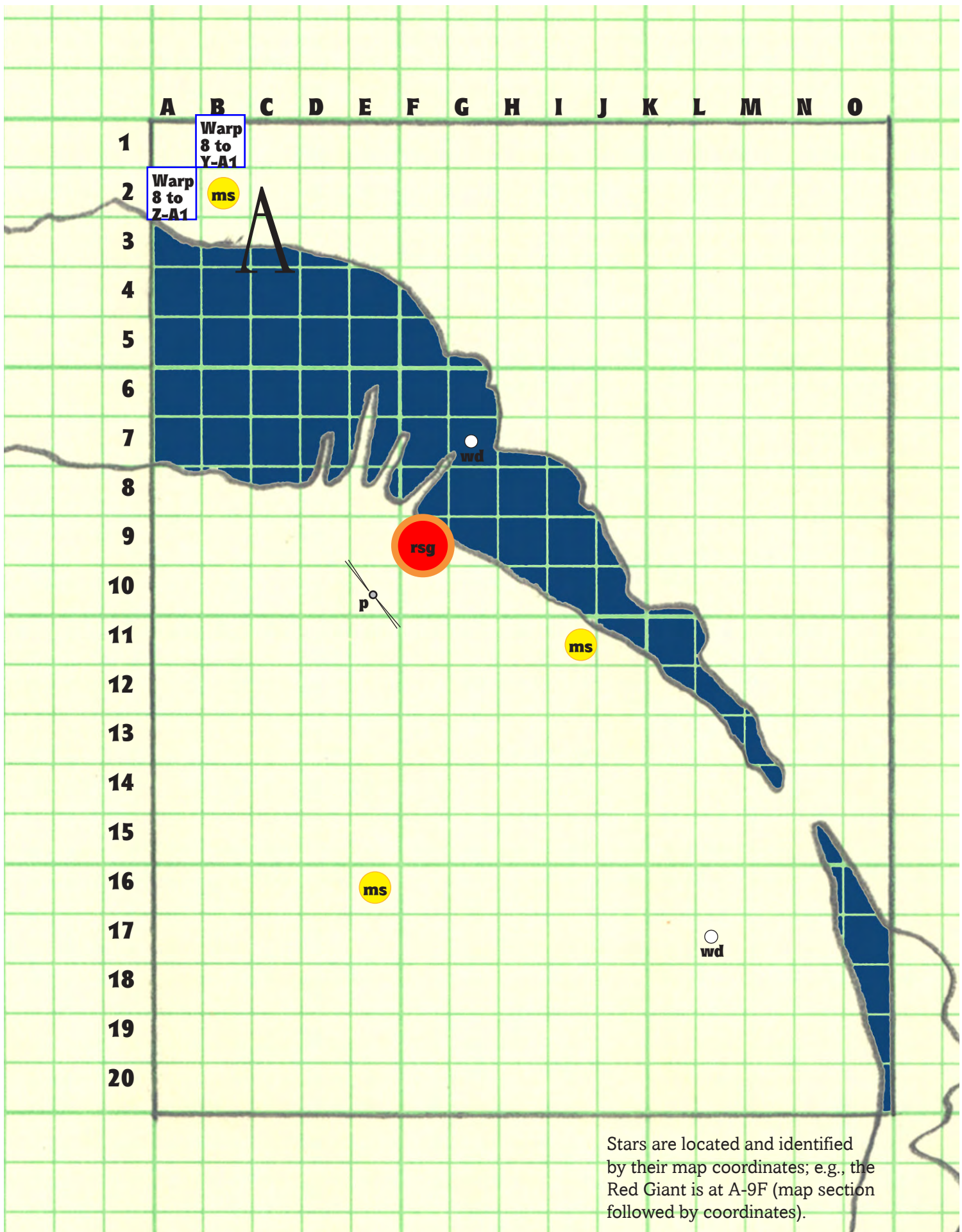
The drawing at left depicts a 3-dimensional construct that consists of 3 intersecting rings that are positioned 90° in relation to each other. The frame around a gyroscope uses the same geometry.

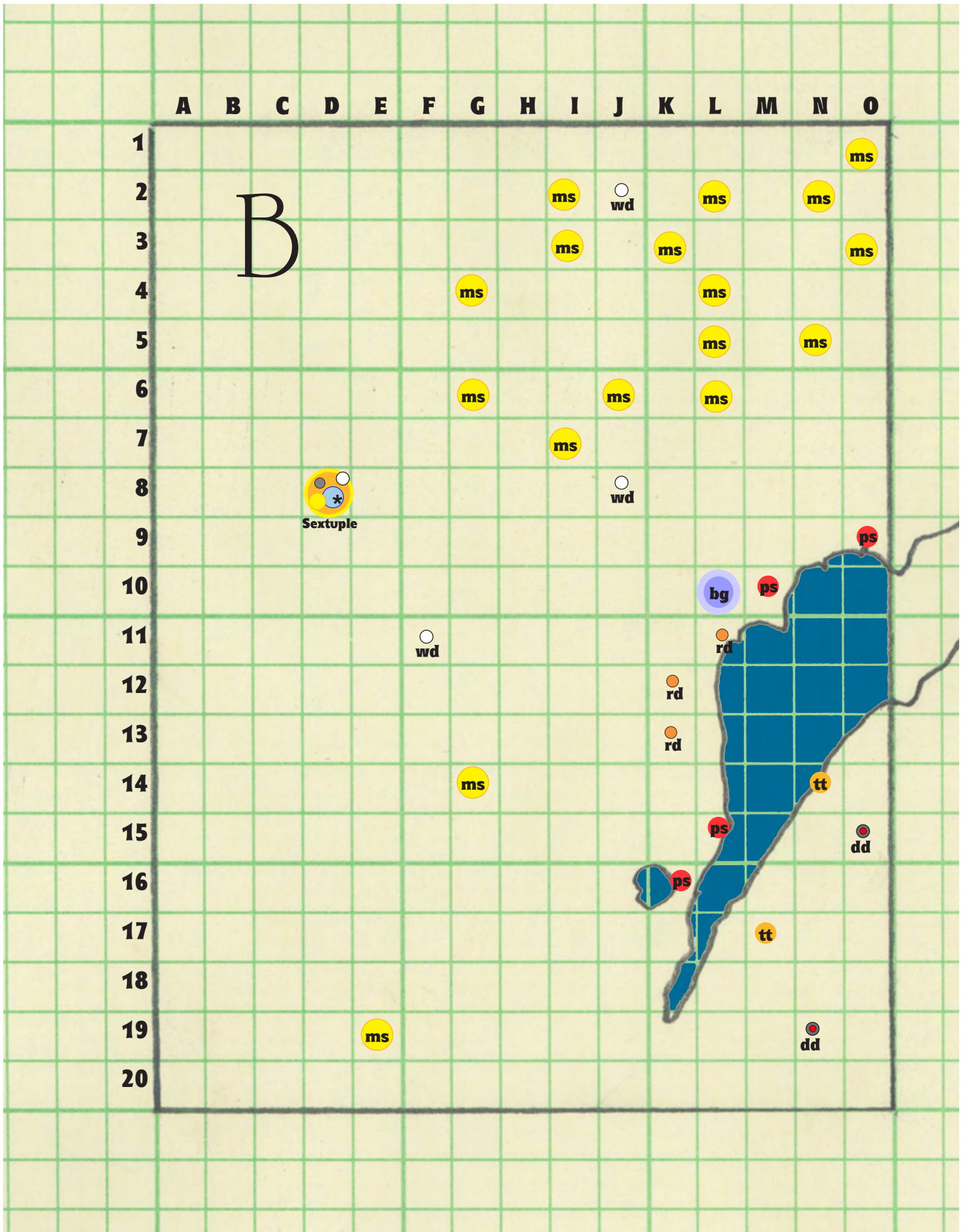
The Star Chart

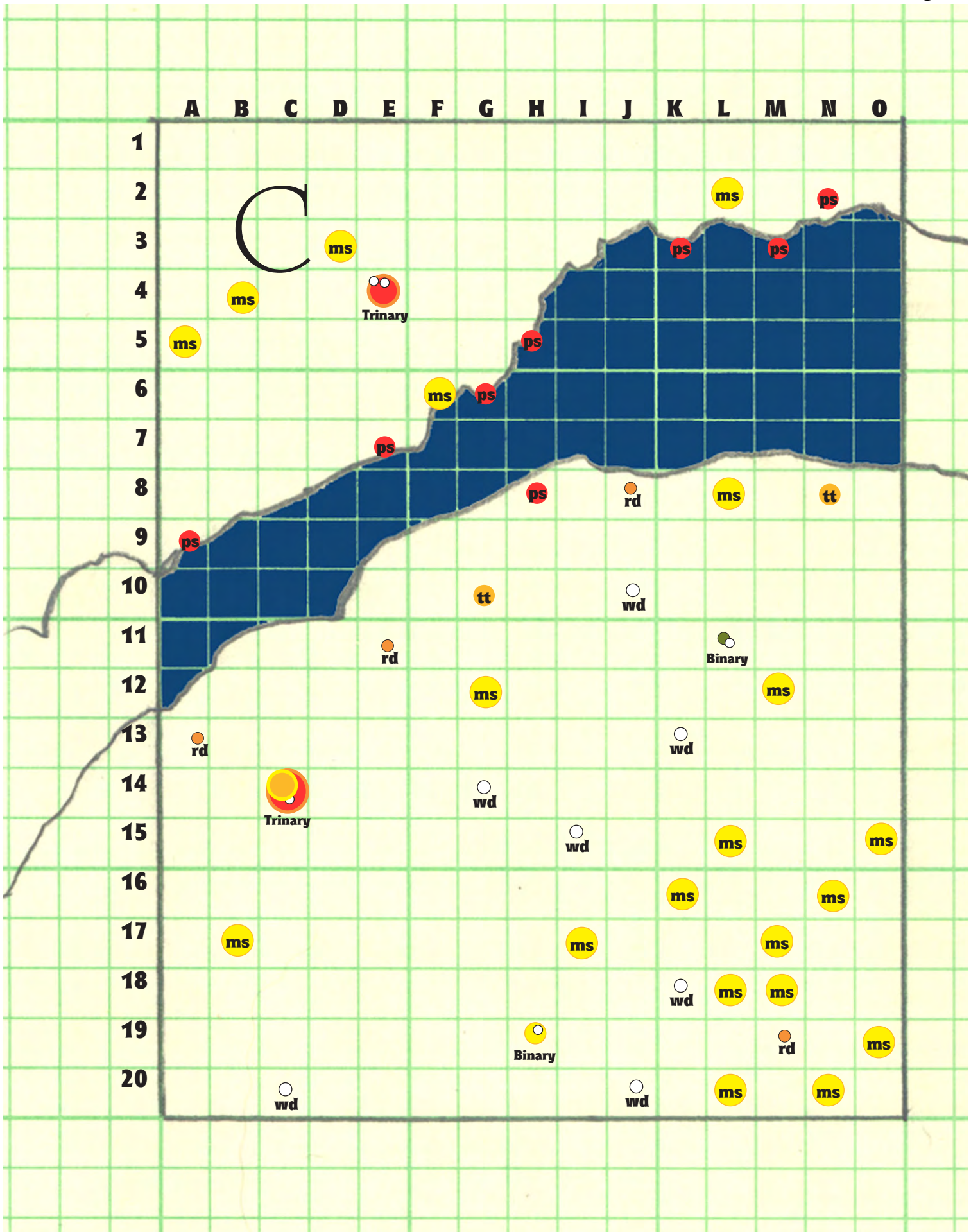
The following pages are maps for a game of as many as six players. Two players will start on the southern half of the main map and two on the north for a total of four players. Six player will be positioned with four players on the main map and one player each on maps Y and Z. Two players will start on the south half of the main map.

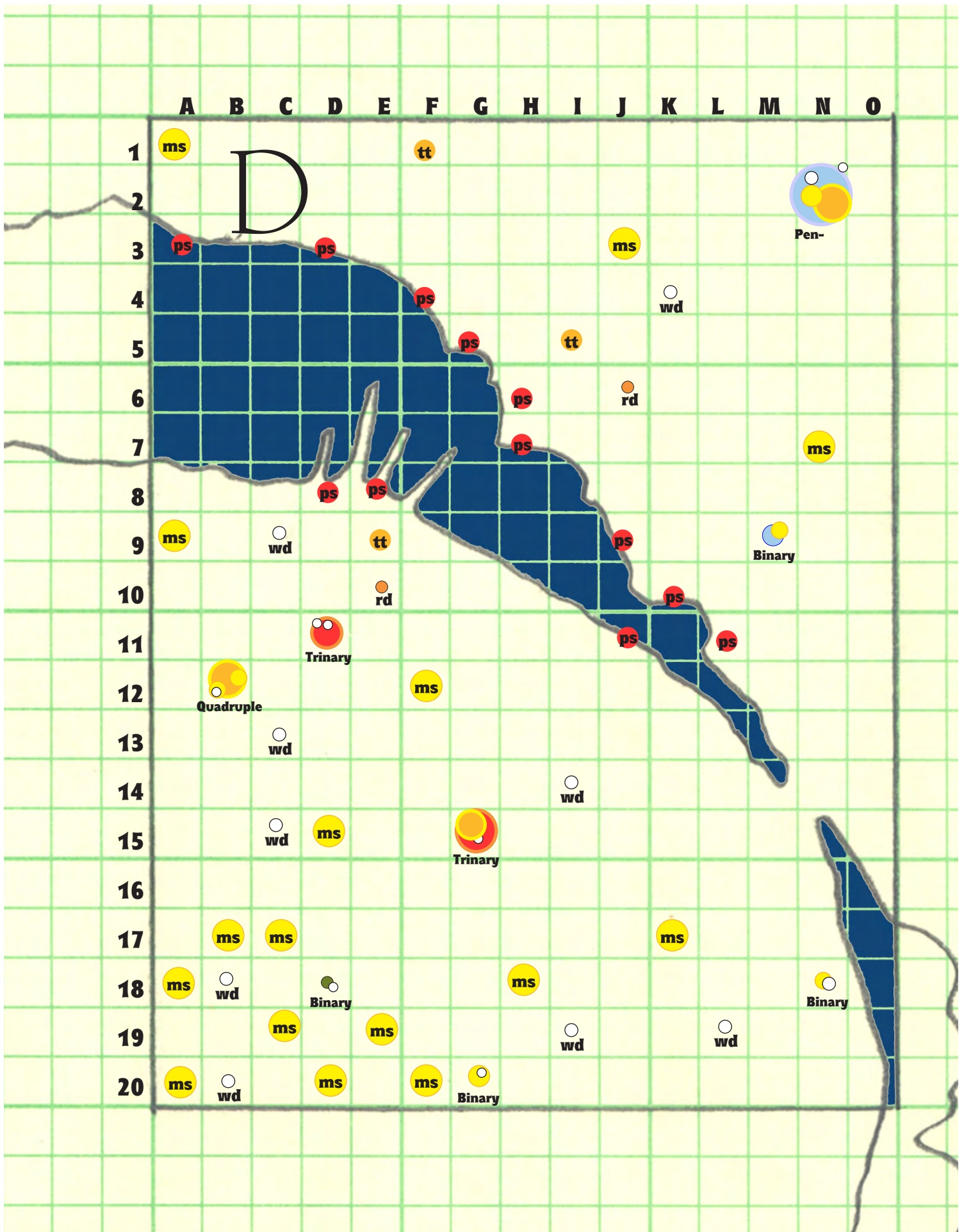
Arrange the 26 map sections as depicted below pinned to a sheet of soft Masonite® or bulletin board material:

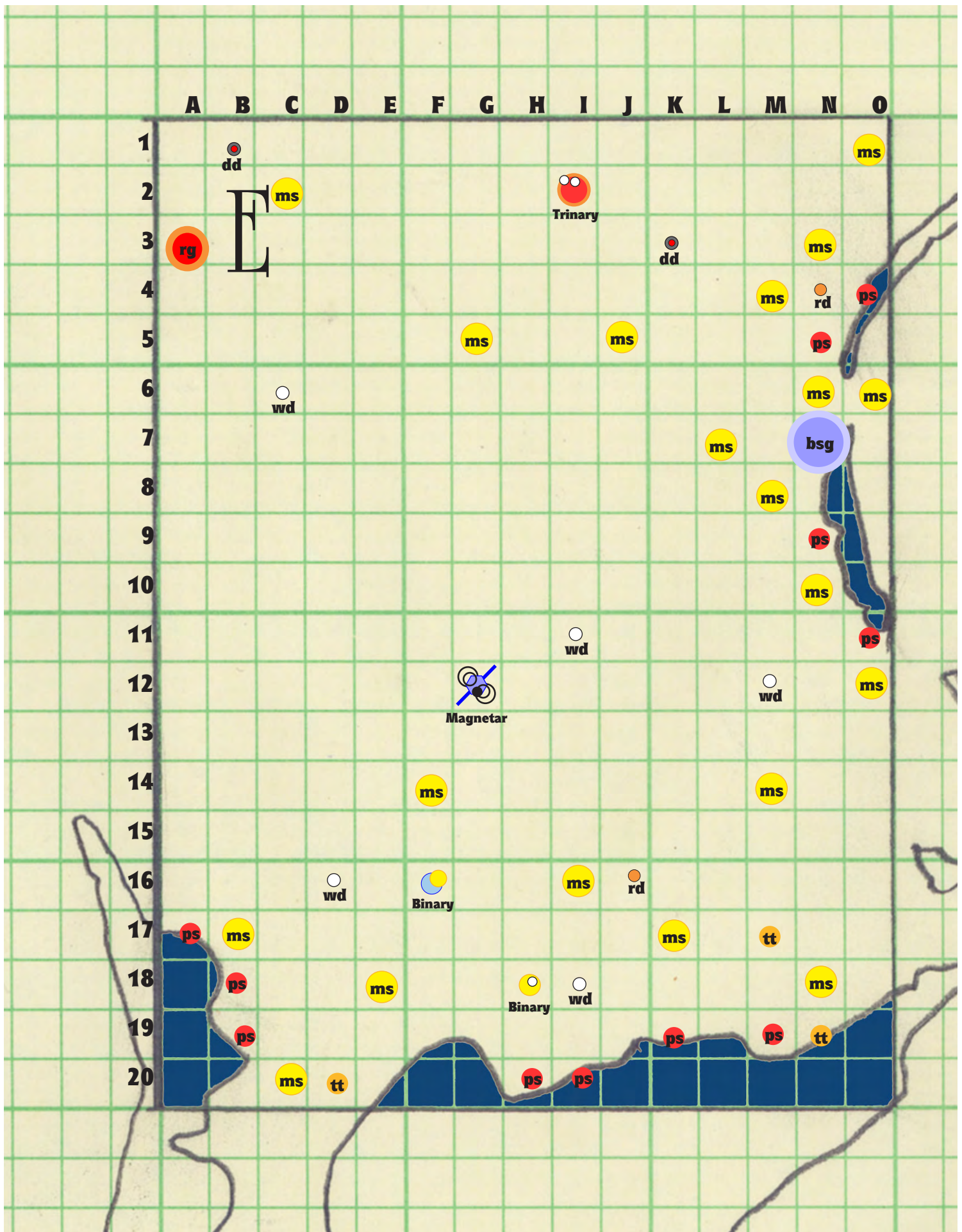


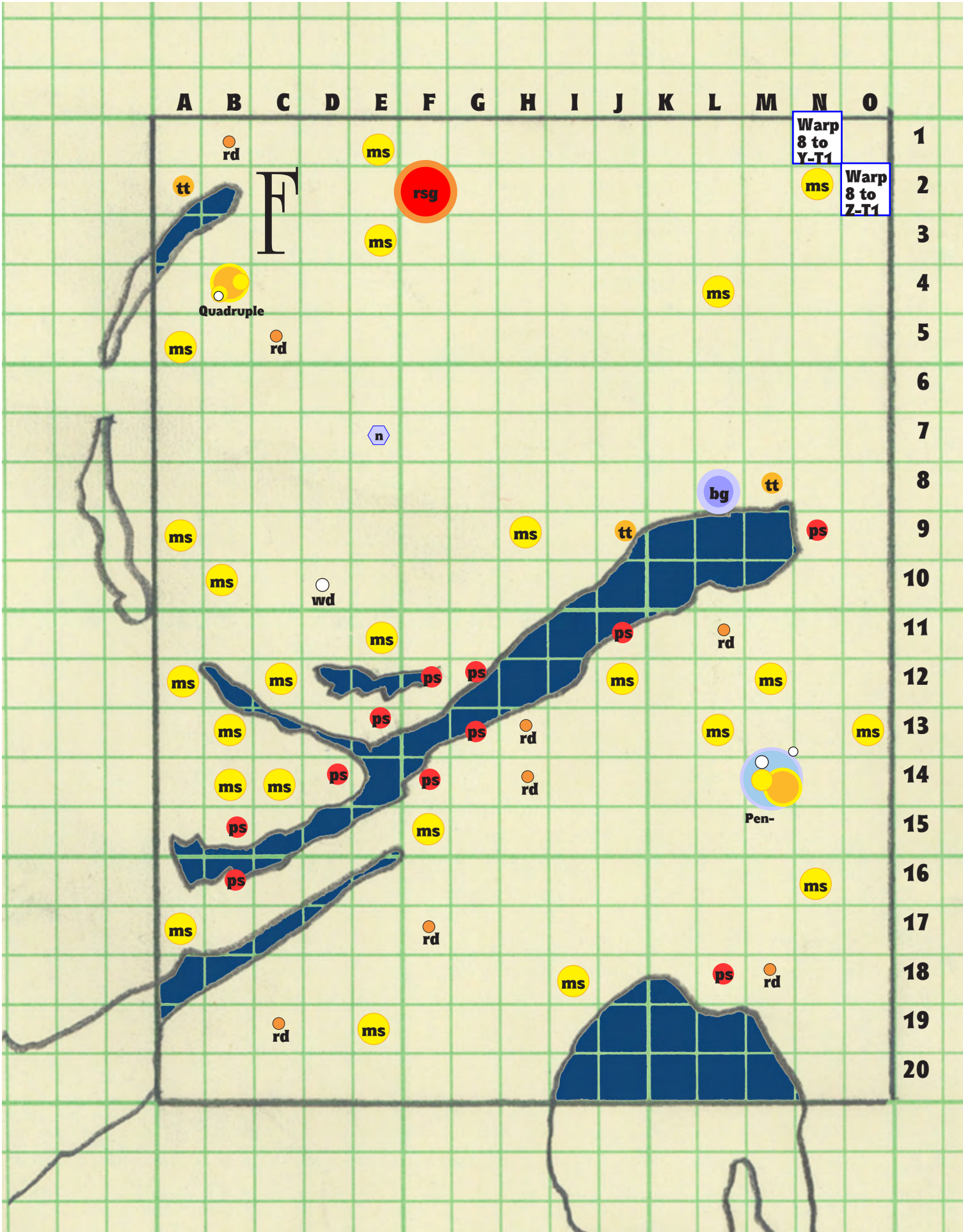


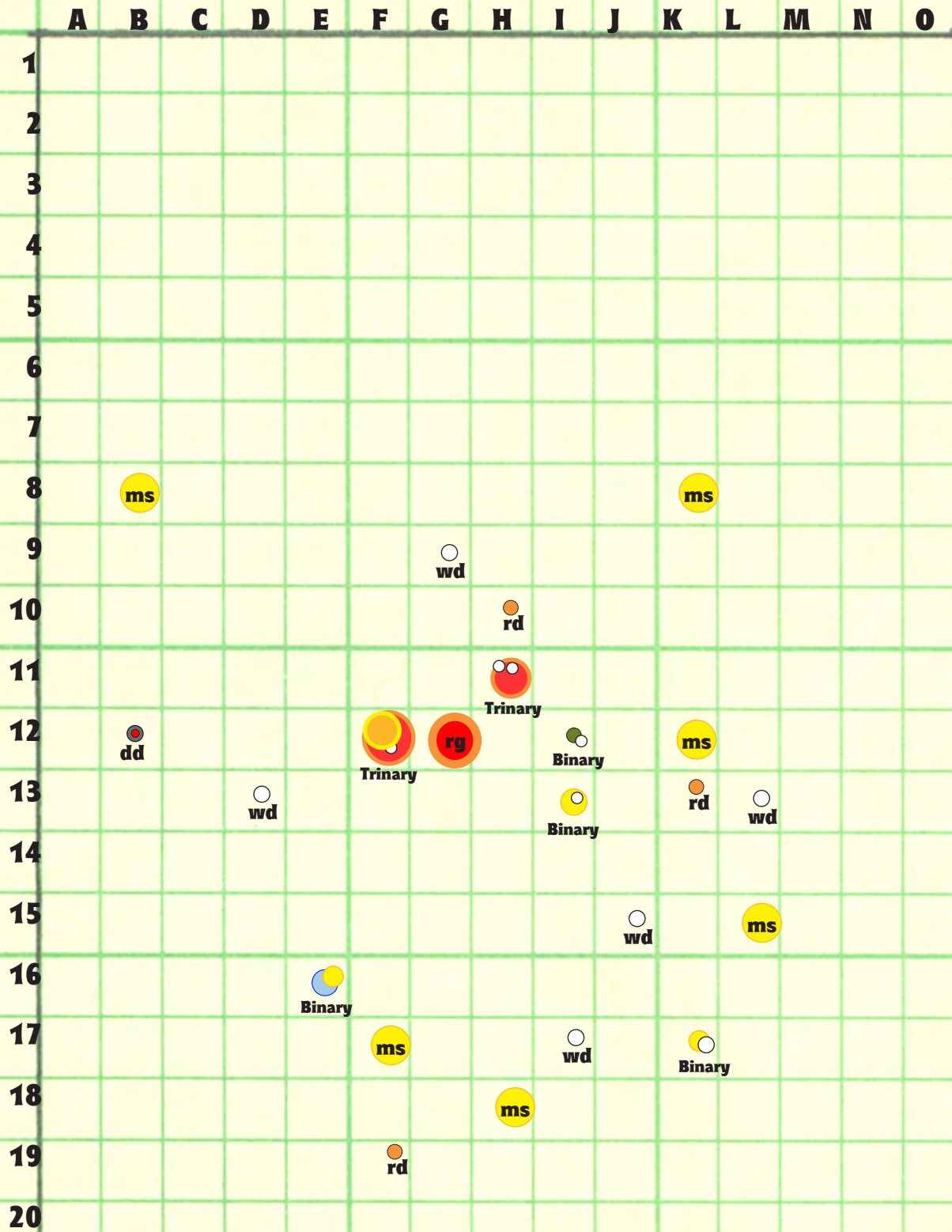


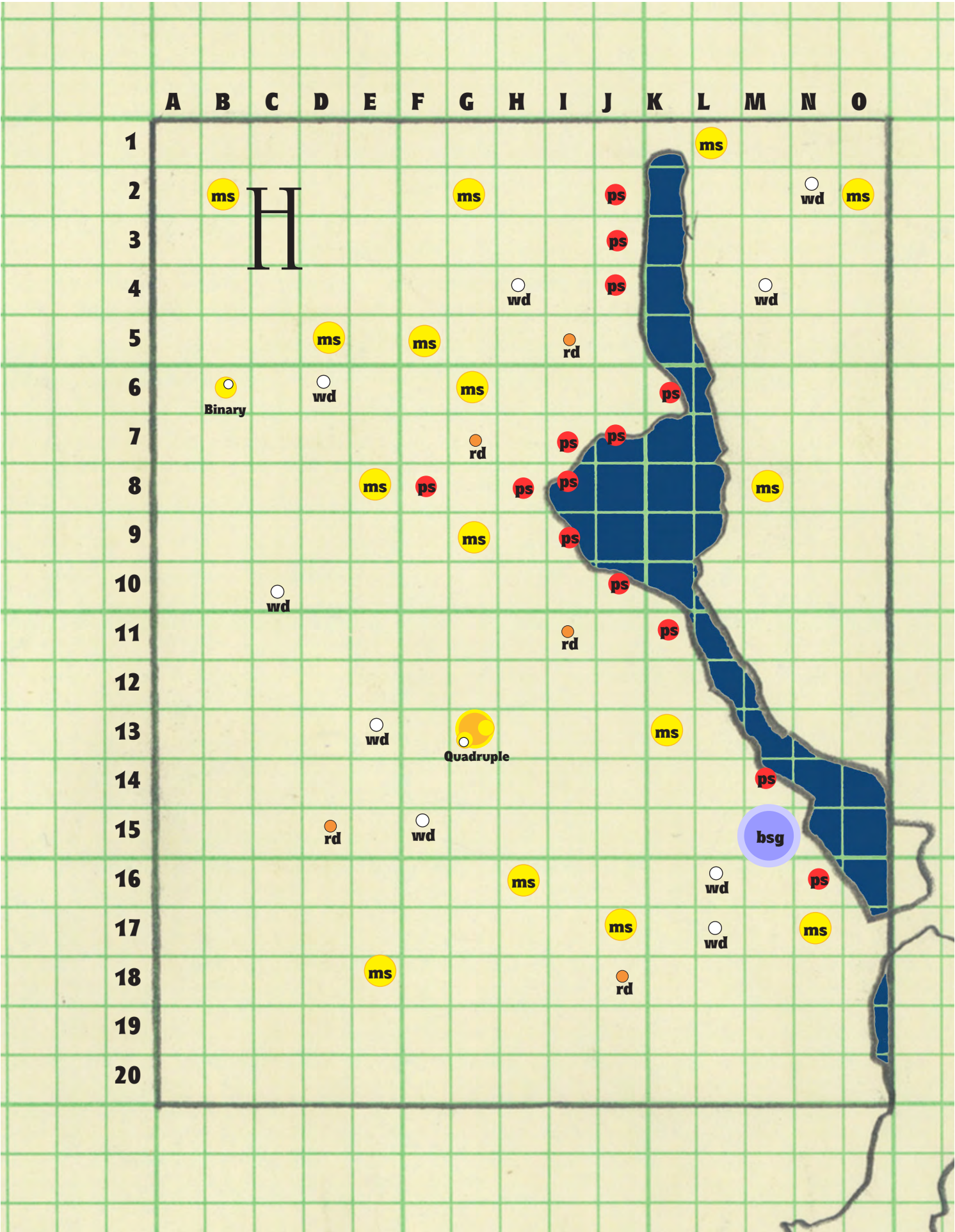


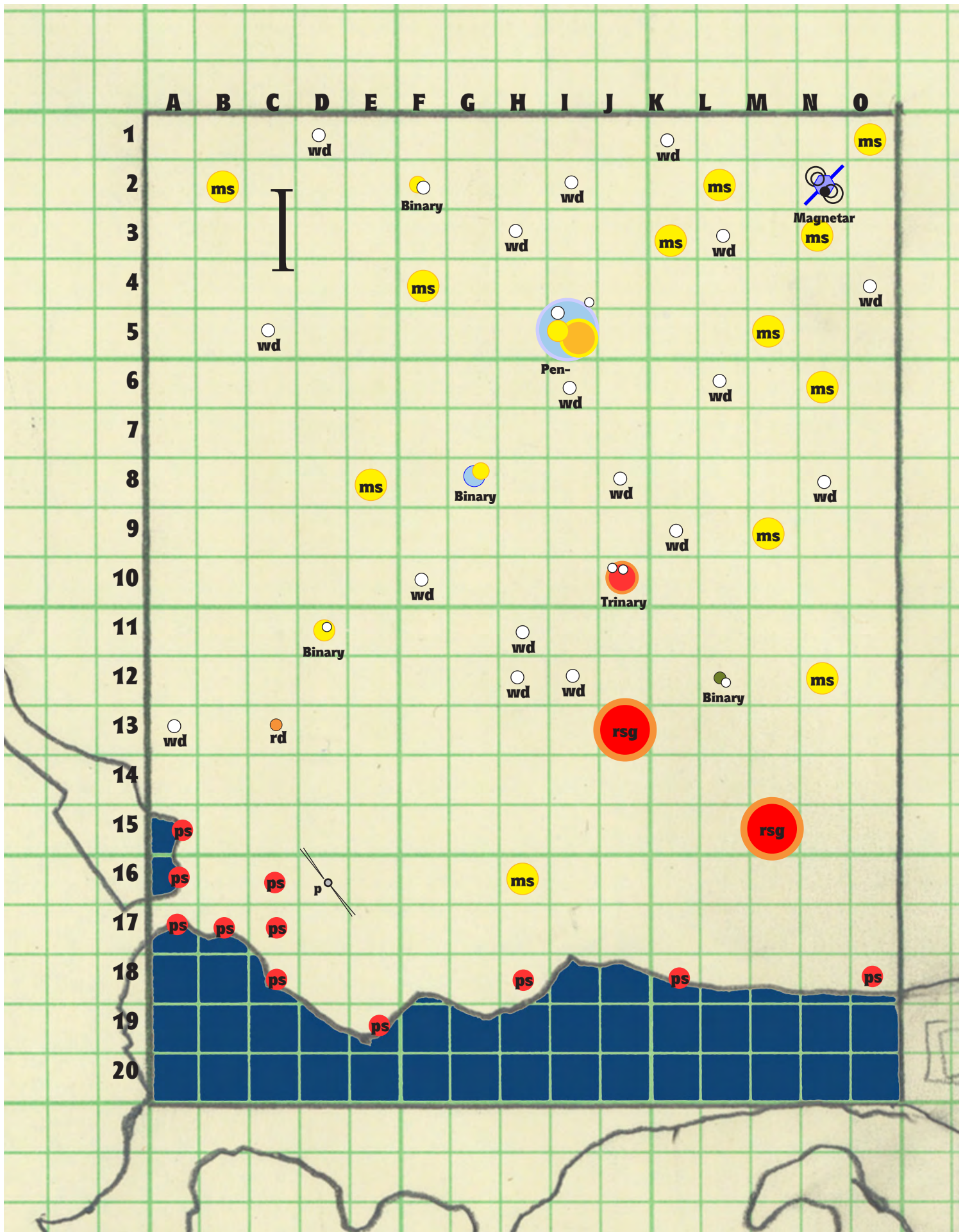


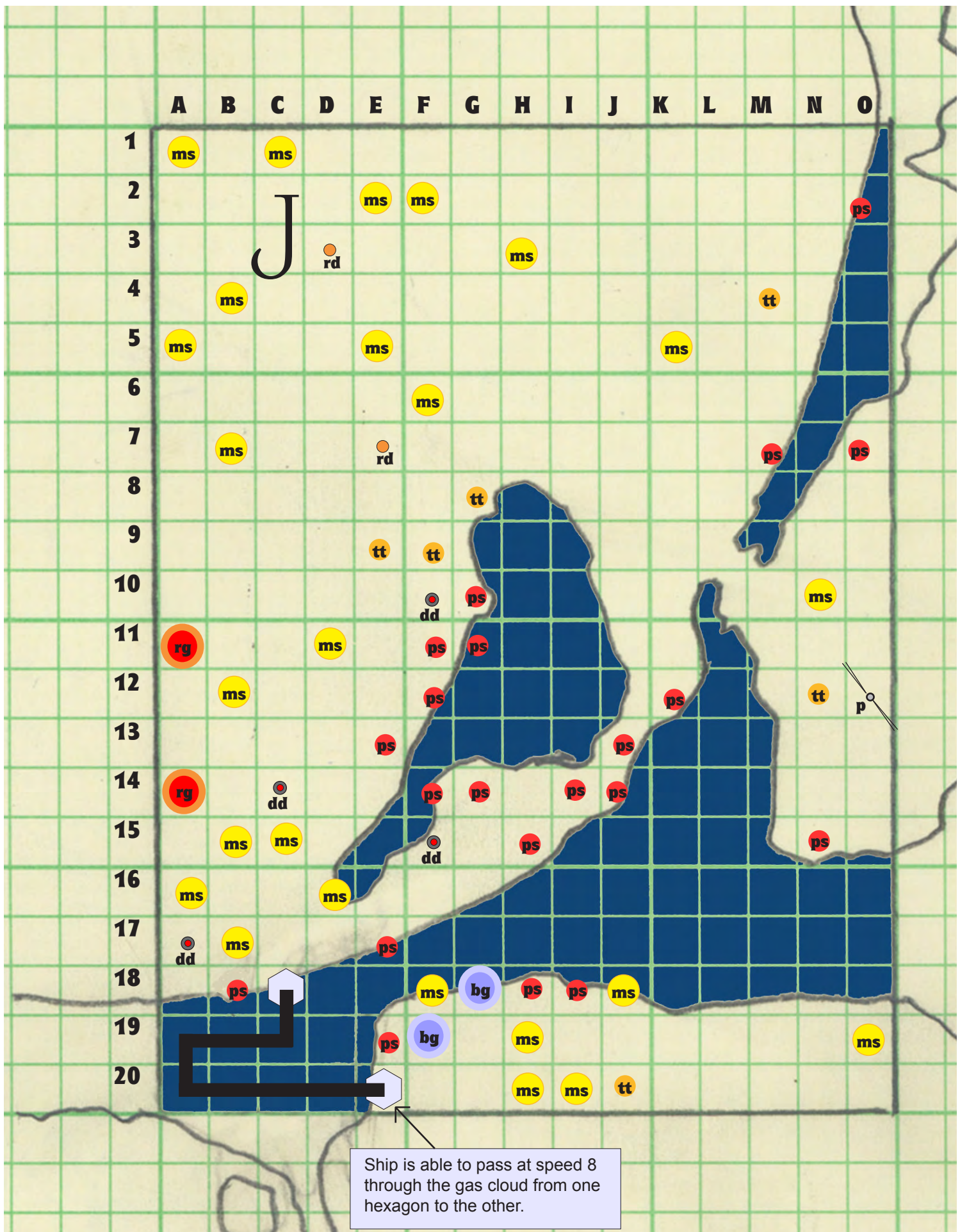


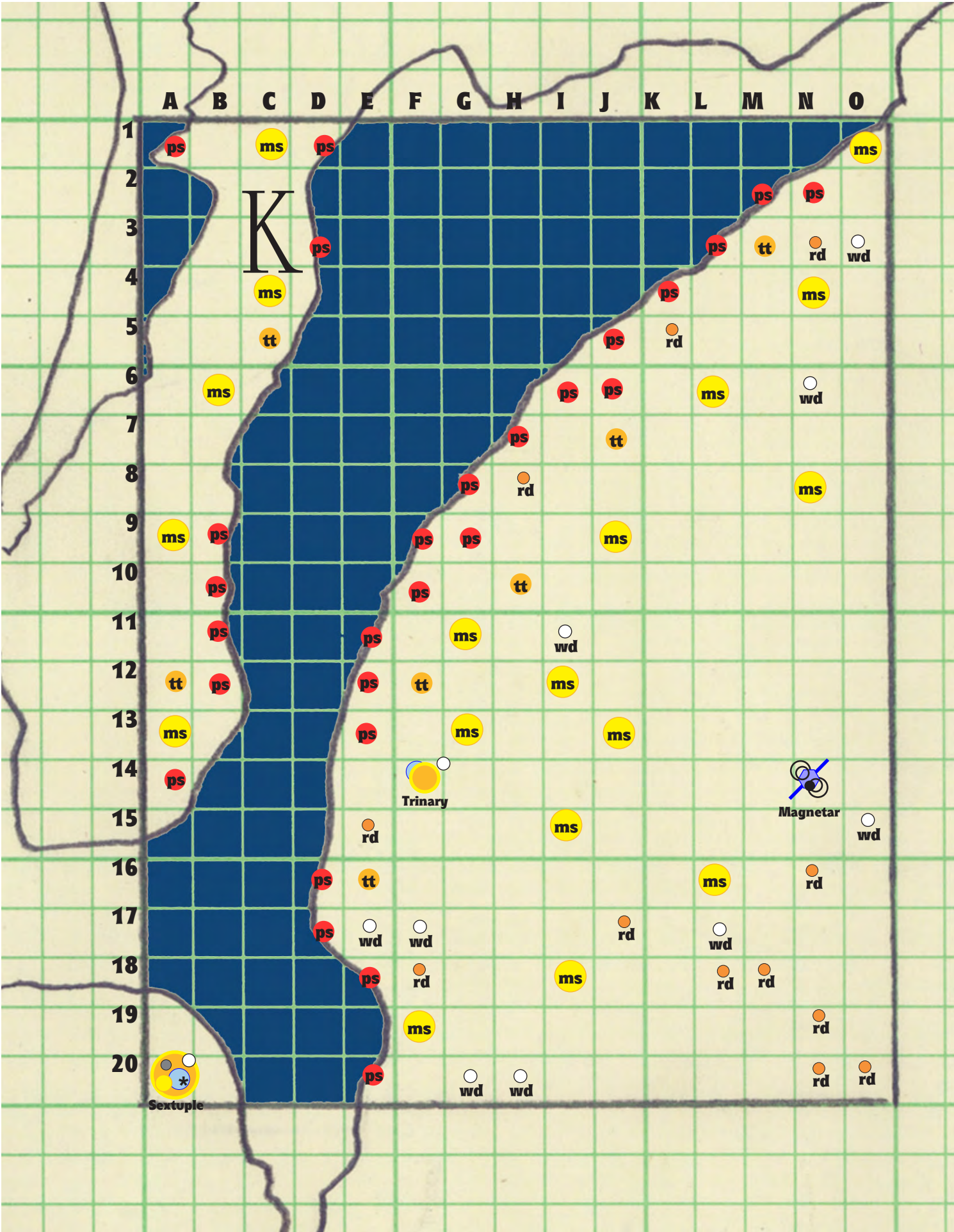


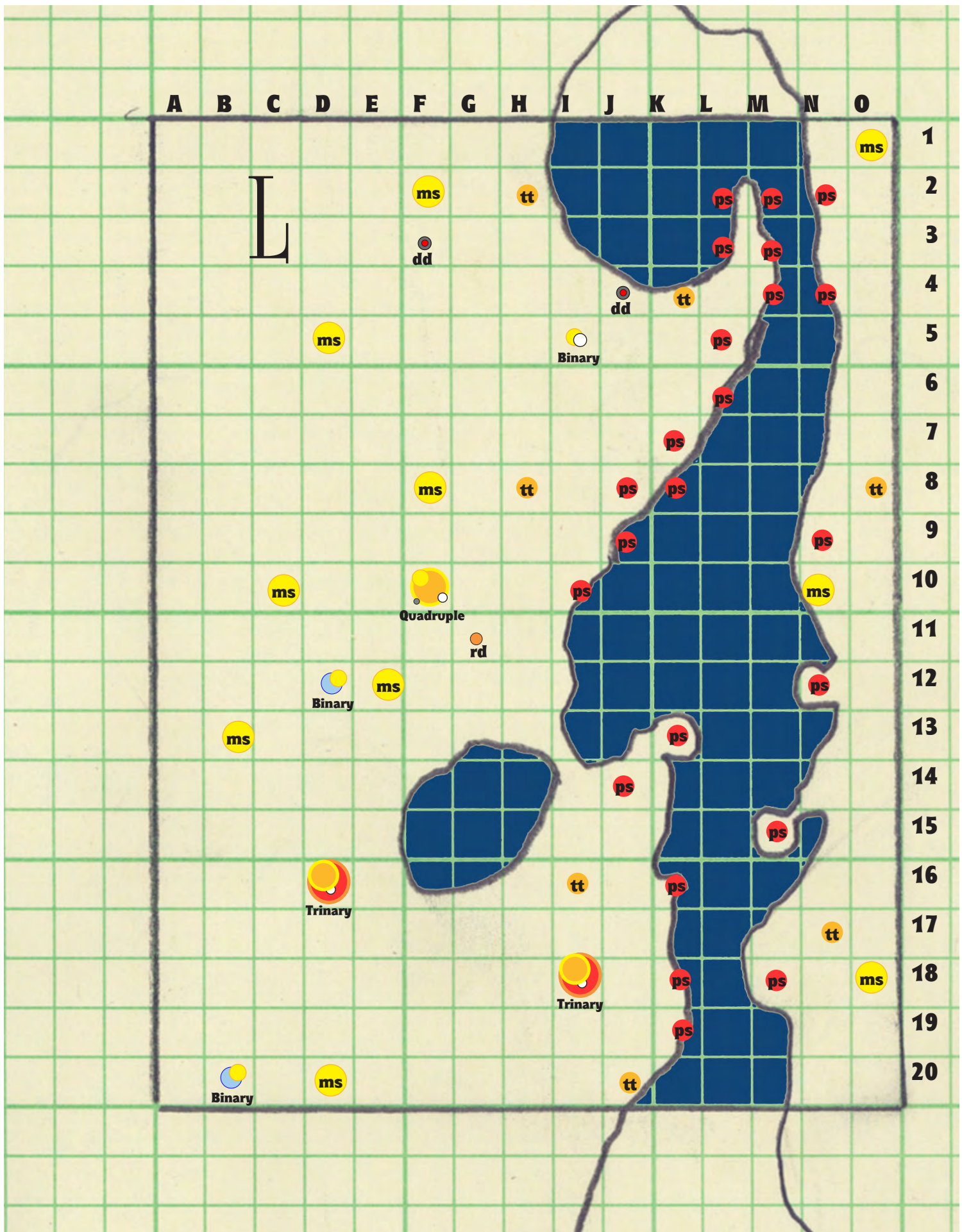


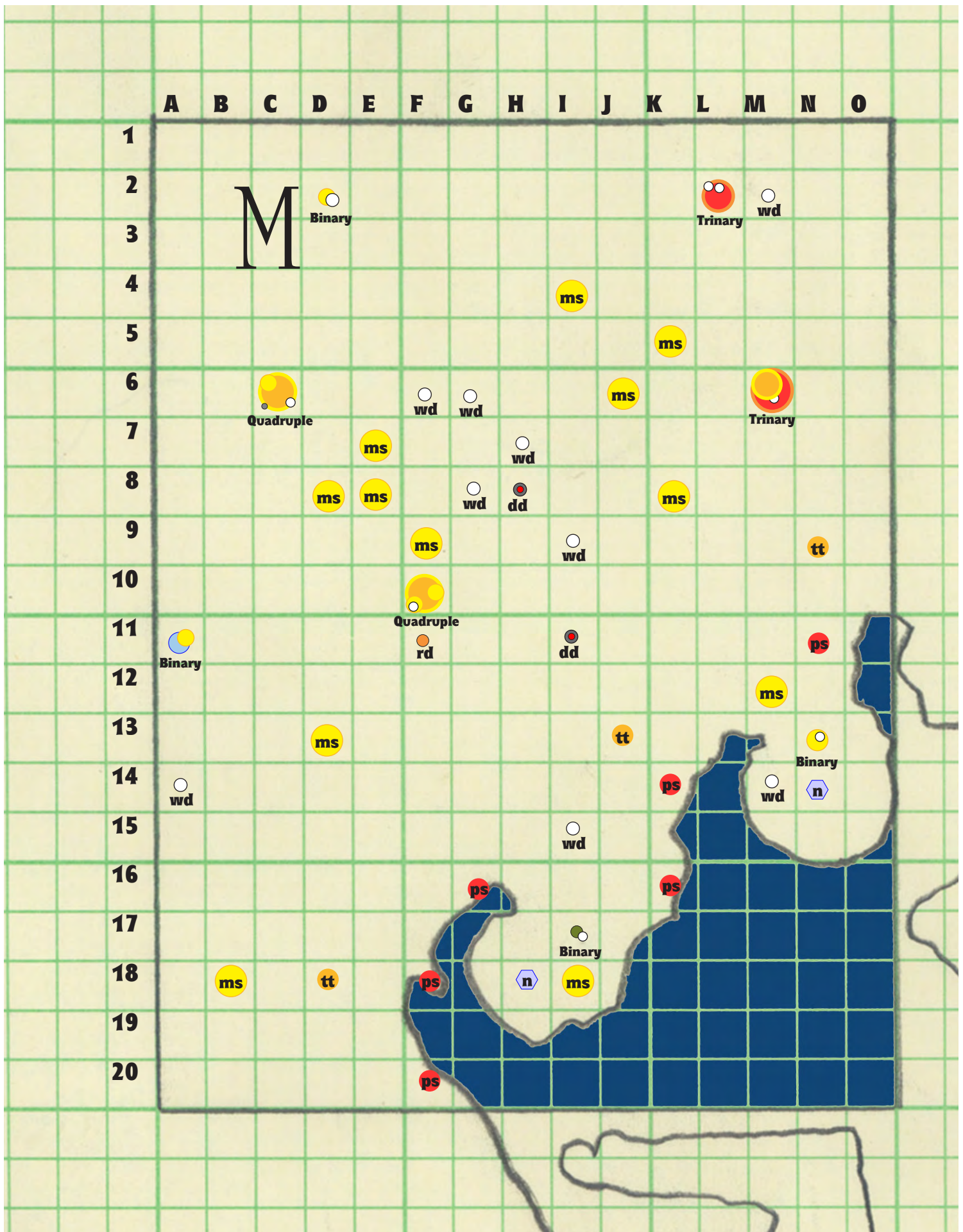


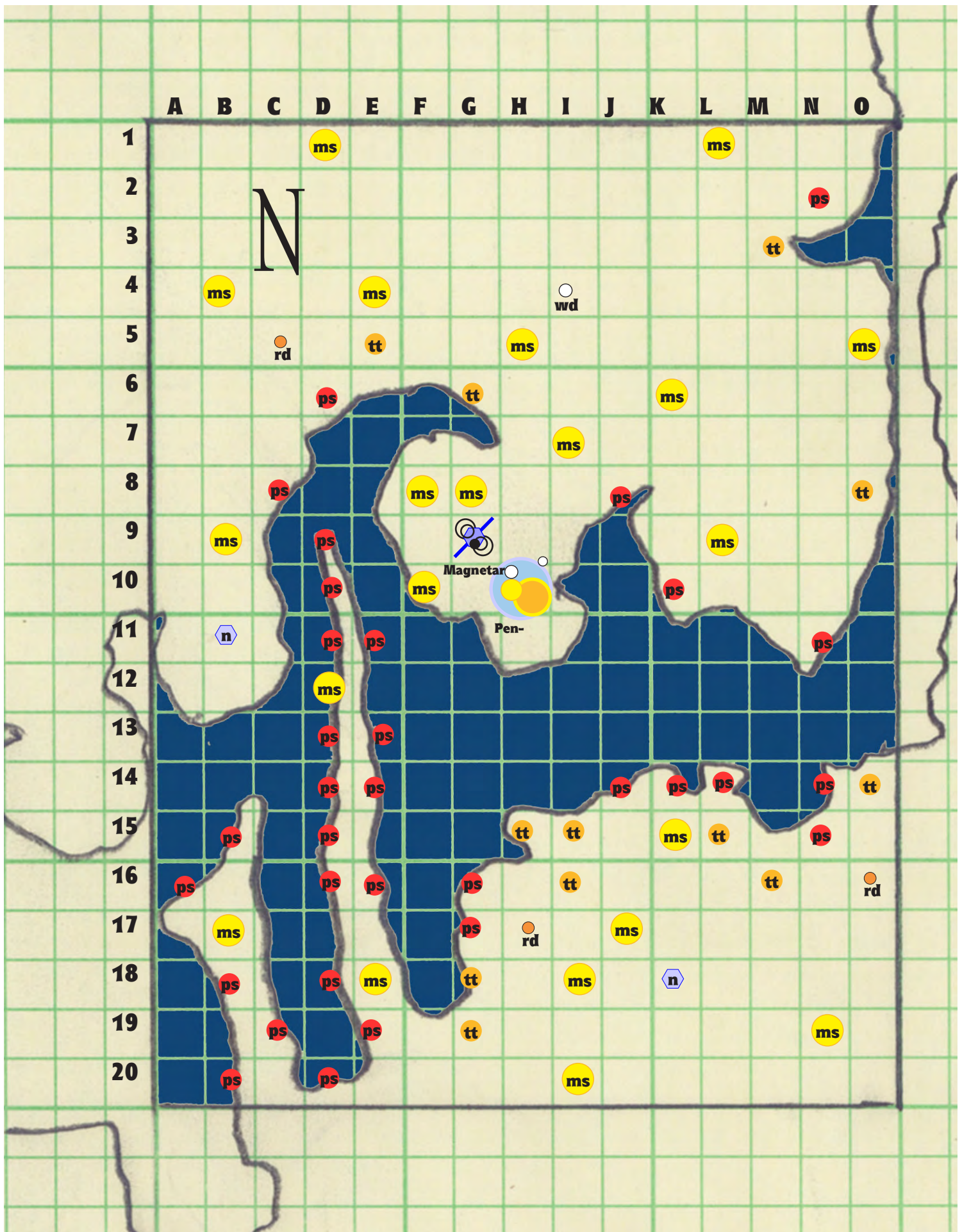


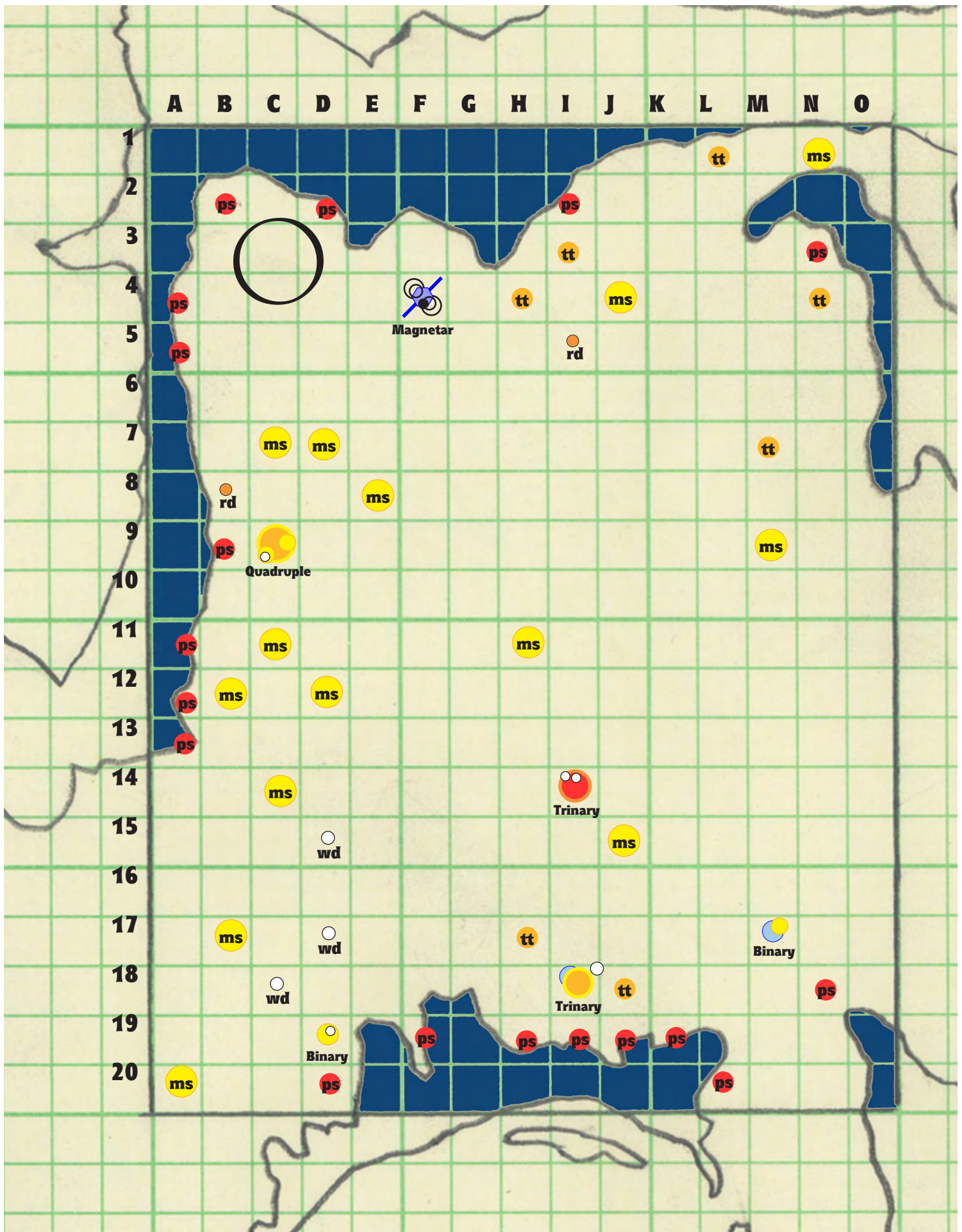


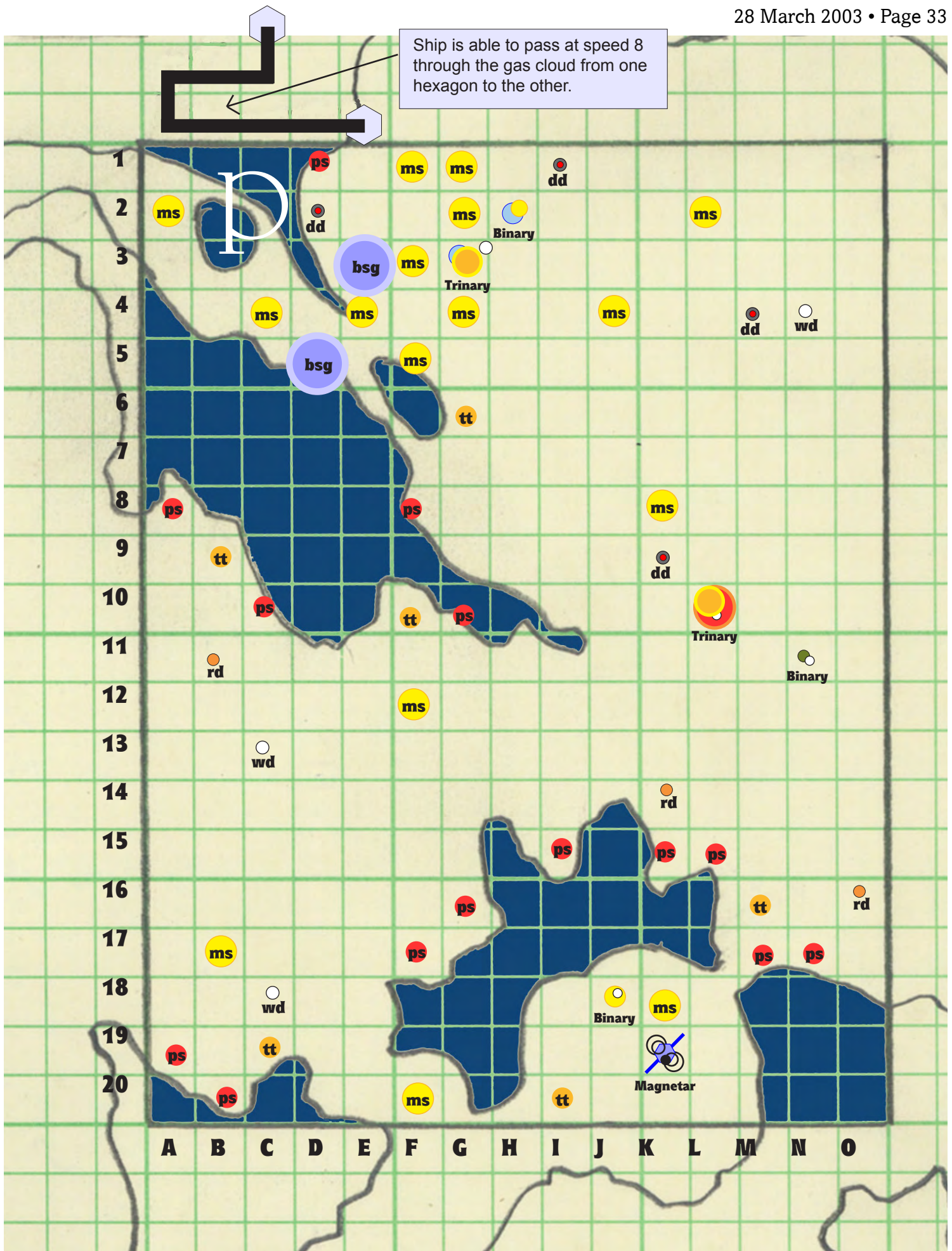


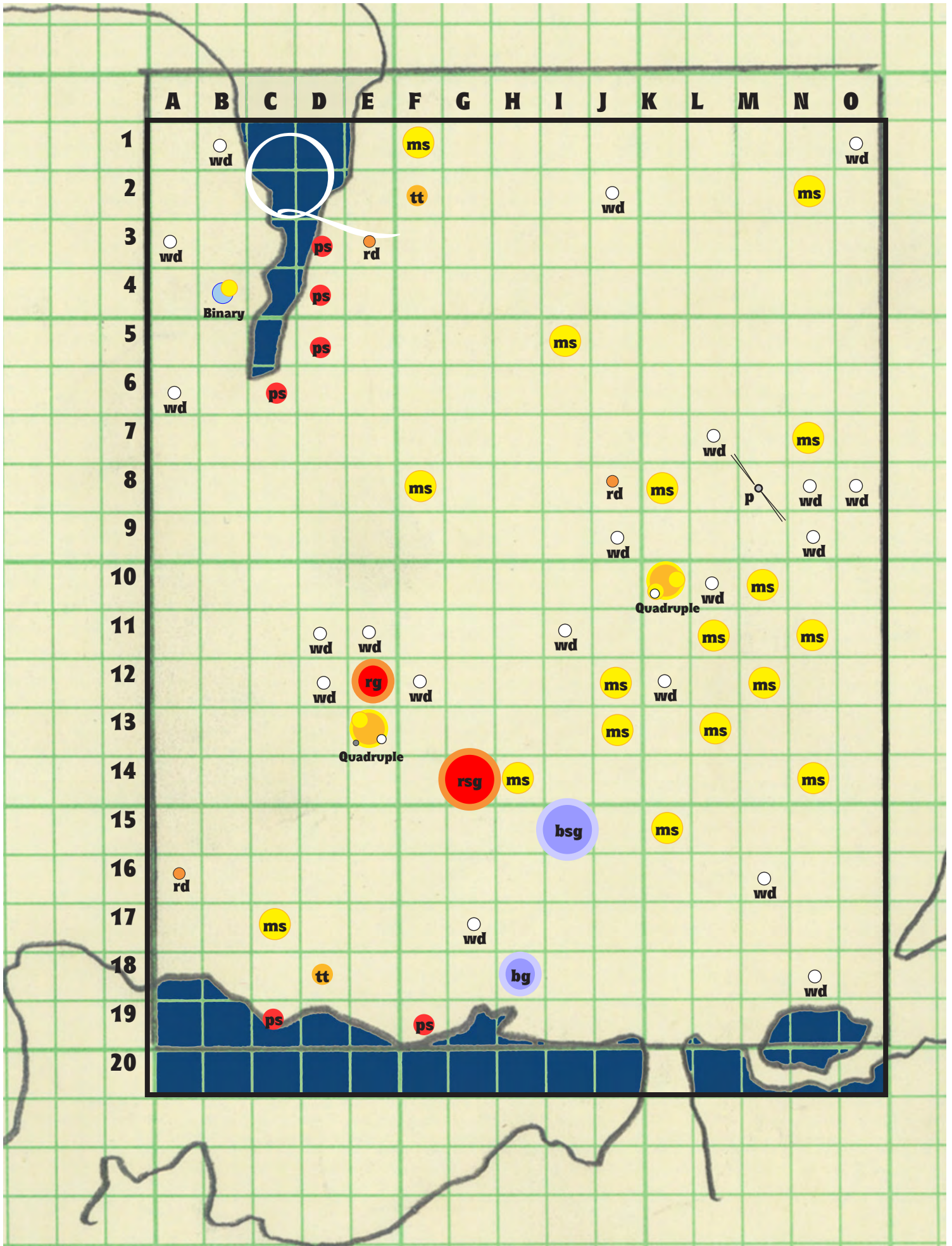


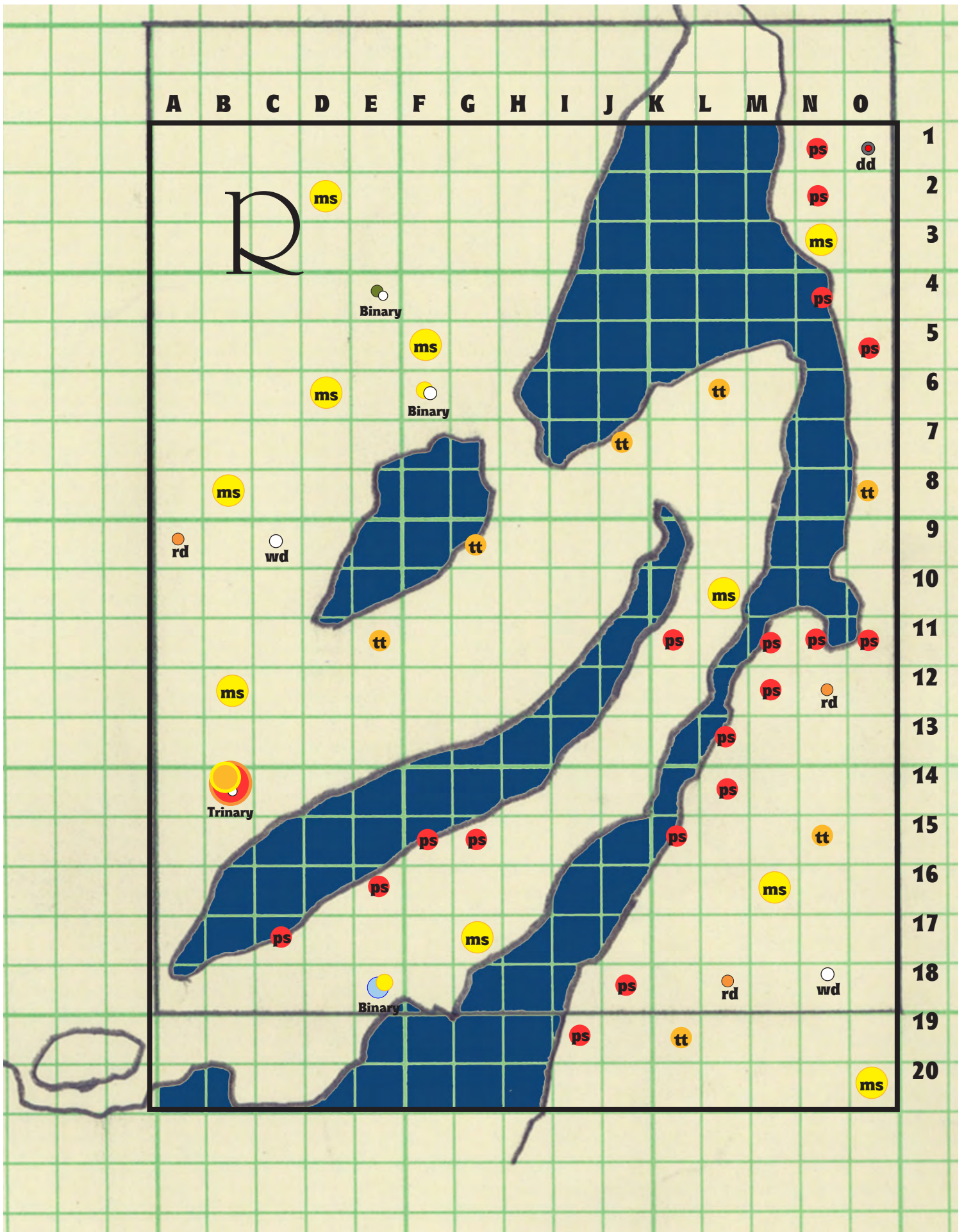






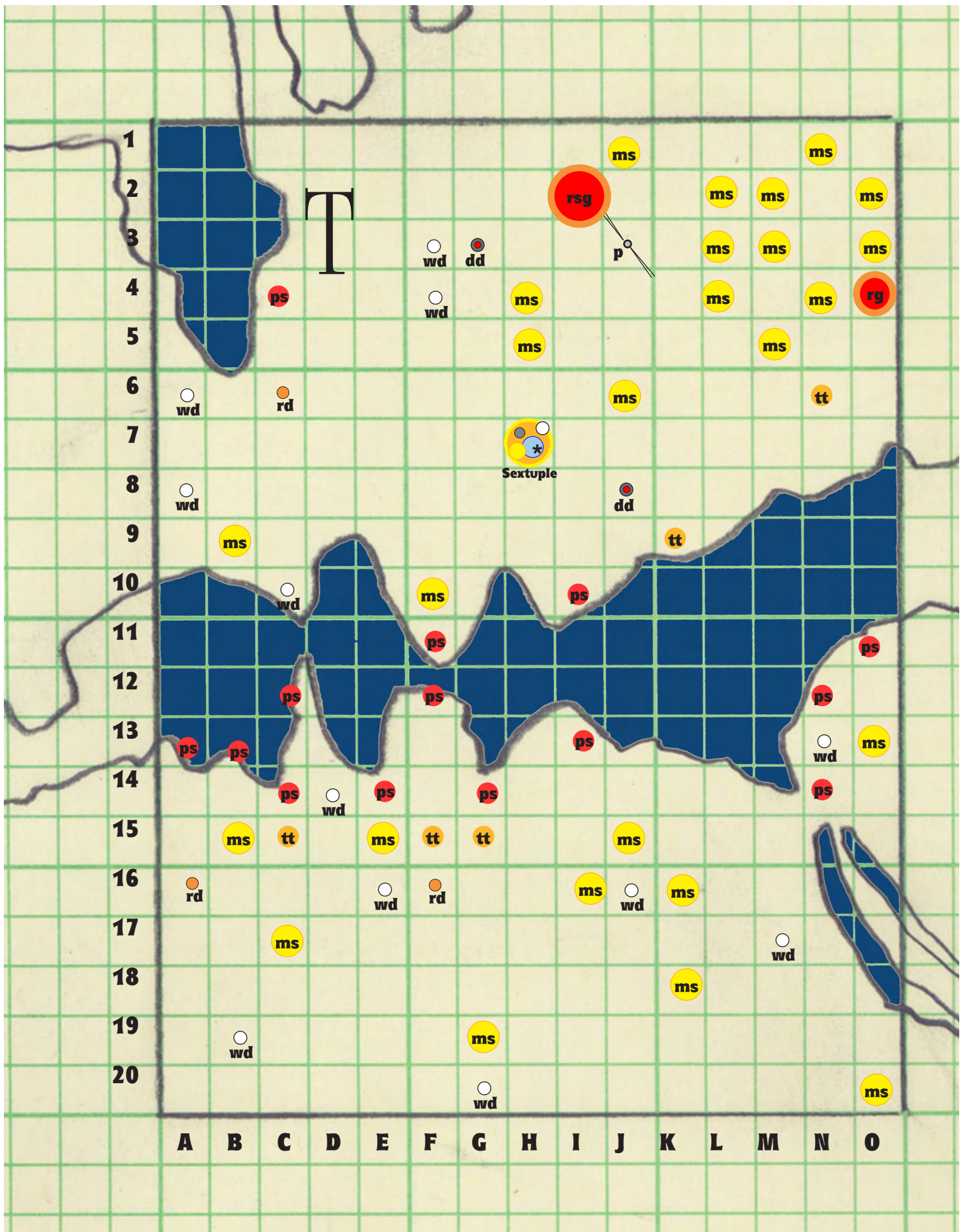


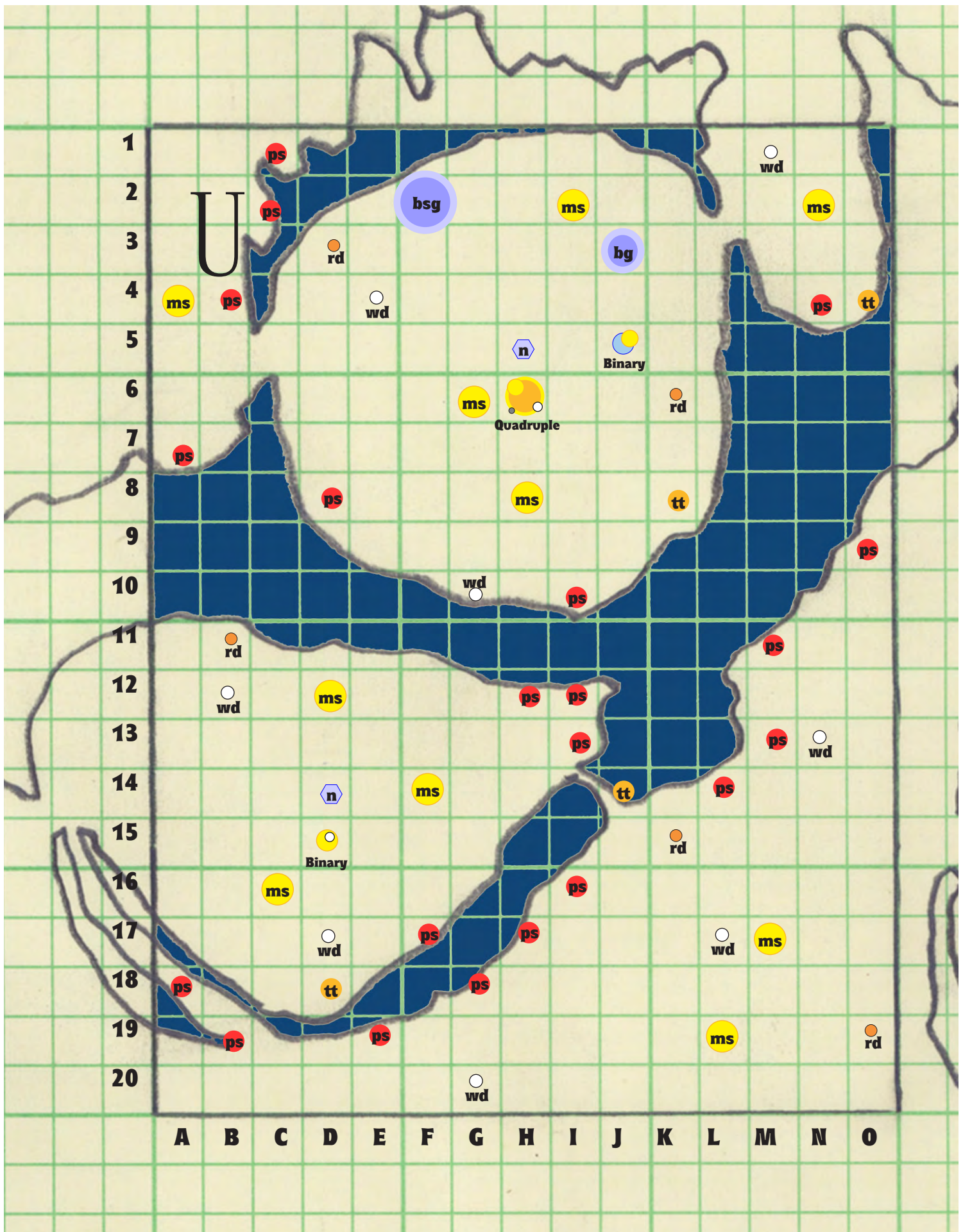


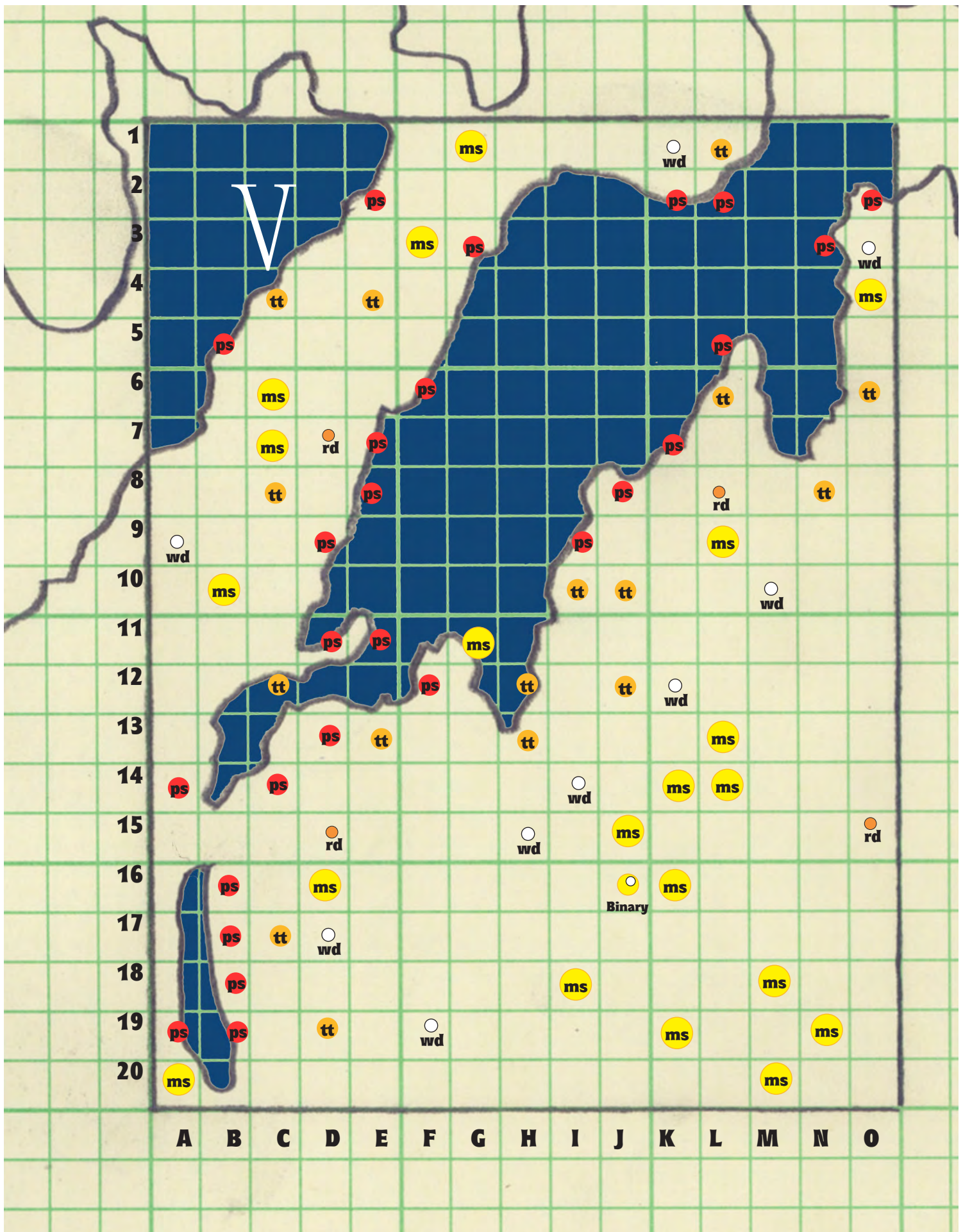


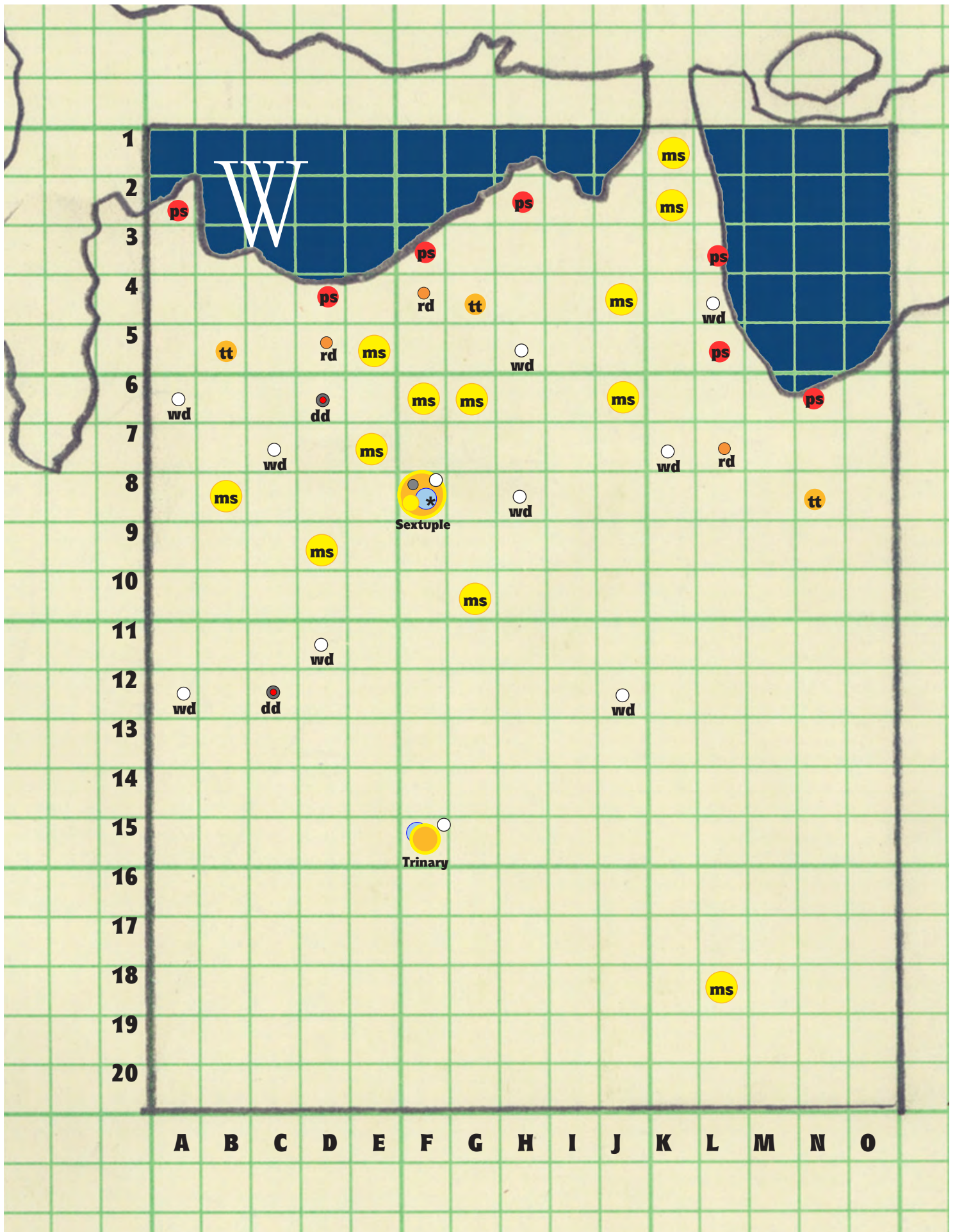
**Warp
8 to
Y-A20**

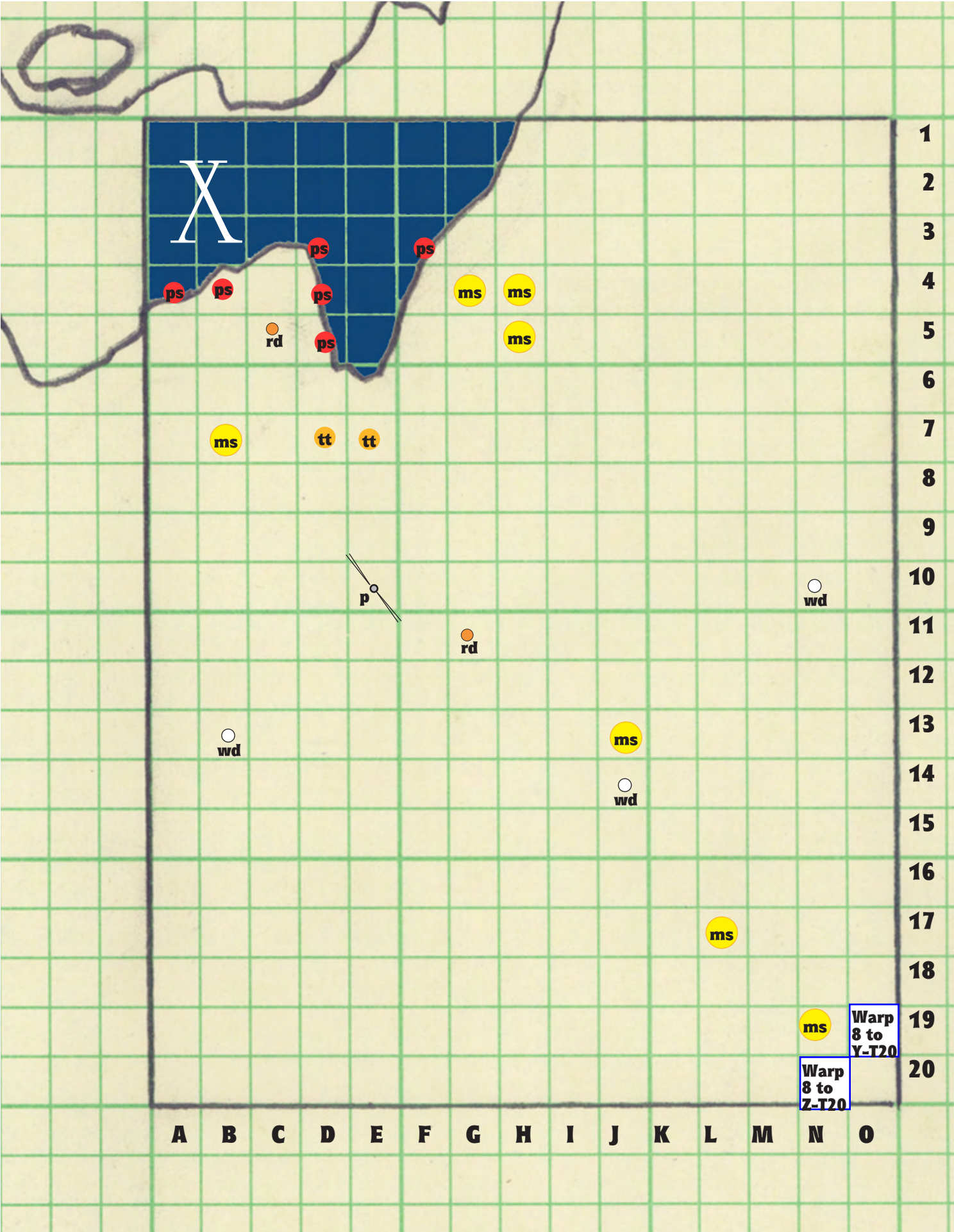
**Warp
8 to
Z-A20**

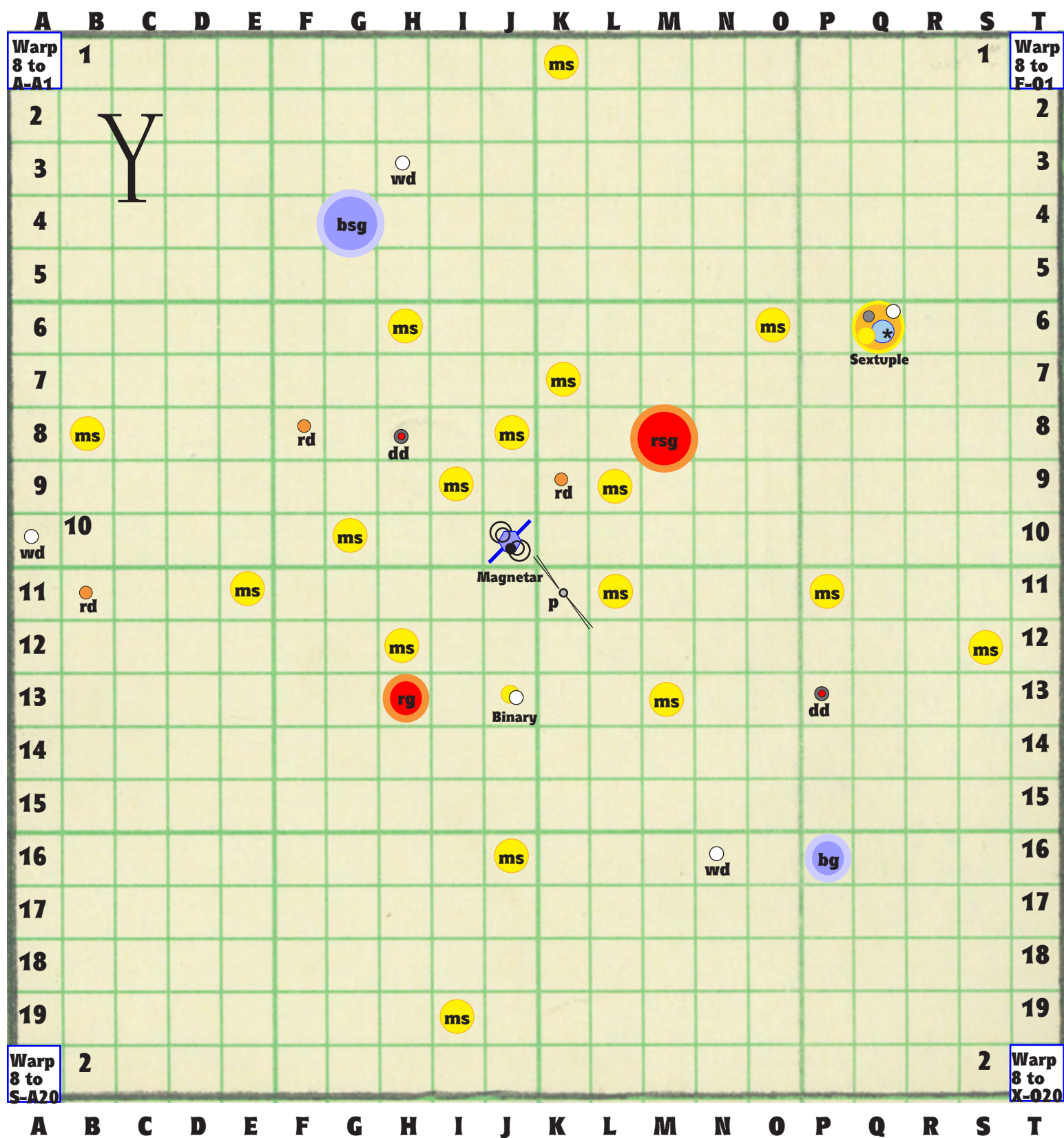


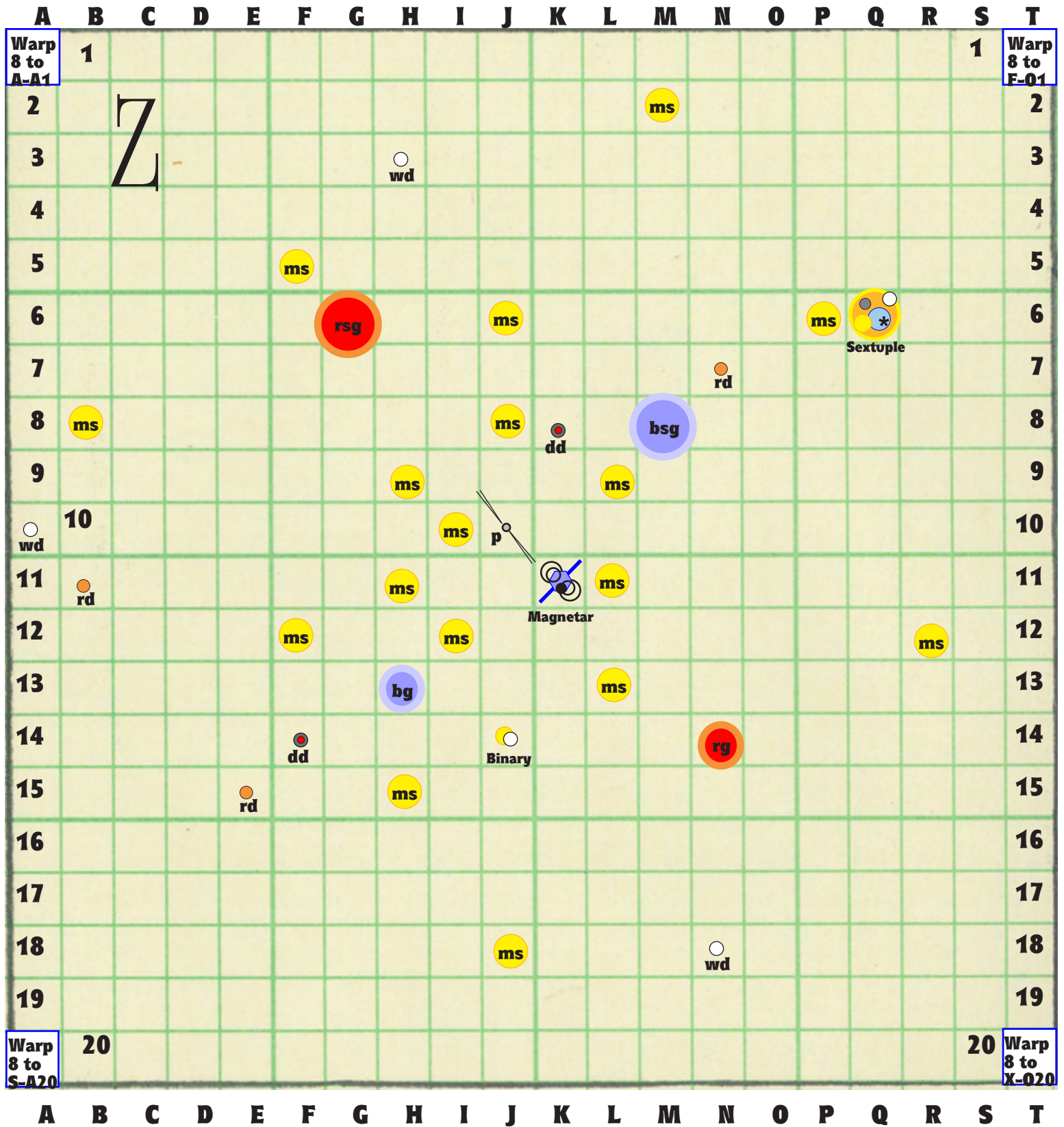












Chapter 3



Cosmology & Denizens



Cosmology

Blue Supergiants: 8
 Red Supergiants: 8
 Blue Giants: 8
 Red Giants: 8
 Main Sequence: 360
 T Tauri Stars: Common adjacent
 to or in gas clouds

Protostars: Very common adjacent to or in gas clouds
 White Dwarfs: Common
 Red Dwarfs: Common
 Dead Dwarfs: 26
 Pulsars: 9
 Neutron Stars: 6
 Magnetars: 6
 Multiple Stars: 82, but far fewer than in a real galaxy

Blue Supergiant



Red Supergiant



Blue Giant



Red Giant



Main Sequence, Yellow



T Tauri Stars



Protostars



White Dwarf



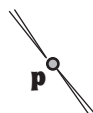
Red Dwarf



Dead Dwarf



Pulsar



Neutron Star



Magnetar



Gallery of Multiple Stars



Sextuple



Quadruple



Trinary



Binary



Binary



Binary



Binary

Stars are located and identified by their map coordinates; e.g., E-18H (map section followed by coordinates).

Star Map Features

The next few pages contain a description of all features that appear on the map in Space Centurions 9.1. The color chart on page 45 shows how various stars appear on the map.

Blue Supergiant



Acronym: bsg

Battle Board: Planet of value with no moons or rings.

Production: TA-107 Bluu Mining Module is half of team that produces bluu/radd worth 10-MT/year or 40-MT/Cycom. Must be paired with a TA-108 Radd Mining Module (see Red Supergiant and Red Giant stars). Only 1 Bluu Mining Module/ Radd Mining Module pair may operate per Blue Supergiant.

Descriptive: Short-lived, super-hot stars. Normally have barren planetary system.

Narrative: A ship lacking TA-201 Radiation Deflector and TA-202 Heat Deflector is lost.

Red Supergiant



Acronym: rsg

Battle Board: Planet of value only with no moons or rings.

Production: TA-108 Radd Mining Module is half of team that produces bluu/radd worth 10-MT/year or 40-MT/Cycom. Must be paired with a TA-107 Bluu Mining Module (see Blue Supergiant and Blue Giant stars). Only 1 Bluu Mining Module/ Radd Mining Module pair may operate per Red Supergiant.

Descriptive: Extremely large, cool-burning star. Normally have barren planetary system.

Narrative: A ship lacking TA-201 Radiation Deflector and TA-202 Heat Deflector is lost.

Blue Giant



Acronym: bg

Battle Board: Planet of value with no moons or rings.

Production: TA-107 Bluu Mining Module is half of team that produces bluu/radd worth 10-MT/year or 40-MT/Cycom. Must be paired with a TA-108 Radd Mining Module (see Red Supergiant and Red Giant stars). Only 1 Bluu Mining Module/ Radd Mining Module pair may operate per Blue Giant.

Descriptive: Short-lived, super-hot stars. Normally have barren planetary system.

Narrative: A ship lacking TA-201 Radiation Deflector and TA-202 Heat Deflector is lost.

Red Giant



Acronym: rsg

Battle Board: Planet of value only with no moons or rings.

Production: TA-108 Radd Mining Module is half of team that produces bluu/radd worth 10-MT/year or 40-MT/Cycom. Must be paired with a TA-107 Bluu Mining Module (see Blue Supergiant and Blue Giant stars). Only 1 Bluu Mining Module/ Radd Mining Module pair may operate per Red Giant.

Descriptive: Extremely large, cool-burning star. Normally have barren planetary system.

Narrative: A ship lacking TA-201 Radiation Deflector and TA-202 Heat Deflector is lost.

Protostar

Acronym: ps

Battle Board: Planet of value has no moon or rings

Production: Used by TA-101 Hyggyns Mining Ship (HMS) to get HOP (page 127)

Descriptive: Coalescing gas cloud enters early stage of star formation (fetus star).

Narrative: A visiting ship without an Asteroid Deflector (TA-200) and a Heat Deflector (TA-202) is lost.

T Tauri Star

Acronym: tt

Battle Board: Planet of value has no moon or rings

Production: Used by TA-101 Hyggyns Mining Ship (HMS) to get HOP (page 127)

Descriptive: Unstable young stars (teen-agers) before entering the main sequence.

Narrative: A visiting ship without an Asteroid Deflector (TA-200) and a Heat Deflector (TA-202) is lost.

White Dwarf

Acronym: wd

Battle Board: Double planetary system.

Production: TA-146 Archaeology Retrieval Craft – White (page 138) used to dig up remains of long-lost civilizations and sift for valuable TAs. Source of even-numbered TAs. Only White Dwarfs along the 10 row (map coordinate) have lost civilizations.

Descriptive: Small hot stars left after giant stars blow off their outer shells.

Narrative: Amphibian Empires will have their home planet located at a White Dwarf. No deflectors are required to visit a White Dwarf.

Red Dwarf

Acronym: rd

Battle Board: Double planetary system.

Production: TA-147 Archaeology Retrieval Craft – Red (page 138) used to dig up remains of long-lost civilizations and sift for valuable TAs. Source of odd-numbered TAs. Only Red Dwarfs along the 11 row (map coordinate) have lost civilizations.

Descriptive: Small stars that never grow large enough to become Main Sequence.

Narrative: Pirate Empires will have their home planet located at a Red Dwarf. No deflectors are required to visit a Red Dwarf.

Dead Dwarf

Acronym: dd

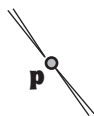
Battle Board: Single large “planet of value” (bottom of page 75)

Production: All Dead Dwarfs can be developed into a production center star (only) using 1 GU plus 2 FY. TA-4 Dead Dwarf Production Center (page 107) is prerequisite.

Descriptive: Burned out star whose surface is hospitably warm and has an atmosphere friendly to organic life. Purists may consider this a low-density, large volume rogue planet.

Narrative: May not be visited by ships until TA-5 Dead Dwarf Telescope has been developed (page 107). No deflectors are required to visit a Dead Dwarf.

Pulsar



Acronym: p

Battle Board: Special presentation of Pulsar.

Production: Source for small quantities of Warp Juice (WJ).

Descriptive: Collapsed remains of giant or supergiant star. Emits powerful pulses of electromagnetic radiation as it spins at a high rate of speed and has a strong magnetic field.

Narrative: Doubles any and all ship's warp speed upon ship's departure. Ship may also depart at normal speed. No limit on direction of approach or departure. A visiting ship without a Radiation Deflector (TA-201) and a Magnetism Deflector (TA-203) is destroyed.

Star is a minor source of Warp Juice (WJ), which is mined by the TA-100 Warp Juice Mining Module (wjm) (page 126). Warp Juice is essential for fleets to engage warp drive. Star can serve any number of wjm. One wjm at a Pulsar produces enough warp juice to power 1 fleet per Cycom.

Neutron Star



Acronym: n

Battle Board: Special presentation of Neutron Star.

Production: Source for moderate quantities of Warp Juice (WJ)

Descriptive: Collapsed remains of giant or supergiant star. Emits powerful pulses of electromagnetic radiation as it spins and has a magnetic field.

Narrative: Star is a moderate source of Warp Juice (WJ), which is mined by the TA-100 Warp Juice Mining Module (wjm) (page 126). Warp Juice is essential for fleets to engage warp drive. Star can serve any number of wjm. One wjm produces enough warp juice to power 2 fleets per Cycom. A visiting ship without a Radiation Deflector (TA-201) and Magnetism Deflector (TA-203) is destroyed.

Magnetar



Acronym: n

Magnetar

Battle Board: Special presentation of Magnetar

Production: Source for large quantities of Warp Juice (WJ)

Descriptive: Collapsed remains of giant or supergiant star. Emits powerful and intermittent electromagnetic radiation and has a super-powerful magnetic field.

Narrative: Only star that is abundantly rich in Warp Juice (WJ), which is mined by the TA-100 Warp Juice Mining Module (wjm) (page 126). Warp Juice is essential for fleets to engage warp drive. Star can serve any number of wjm. One wjm produces enough warp juice to power 4 fleets per Cycom. A visiting ship without a Radiation Deflector (TA-201) and Magnetism Deflector (TA-203) is destroyed.

Multiple Stars – Home Stars

Acronym: Sextuple, Pentuple, Quadruple, Triple, Binary. Players will name their empire.

Battle Board: Full planetary system, which is assumed to be located at a Main Sequence or Dwarf star within the multiple system.

Production: 20-MT/year or 80-MT/Cycom when fully developed (see Factories, page 58). Starting home star for all empires. Relocated home star must be at a Multiple (Seat of Government Ship, page 87). Unoccupied Multiple Stars have no production and cannot be colonized or developed, except as a home star. Home stars do not have a GU; the populace is inherently loyal.

Descriptive: Multiple Star system whose components are locked in complex orbits that foster orbital instability for stars, planets and hazards.

Narrative: When used as a home star, no deflectors are needed by the occupying empire. However, a visiting ship from another empire without Asteroid Deflector (TA-200), Radiation Deflector (TA-201), Heat Deflector (TA-202) and Magnetism Deflector (TA-203) or Super Deflector (TA-210) is destroyed. An empire that relocates its home star may do so only to another Multiple Star and will not need any deflectors for its ships. All other Multiple Stars that are *not* host to a home star will destroy any ship without the aforementioned deflectors. In other words, a ship visiting a multiple star requires all hazard deflectors unless it is your home star or is becoming your home star that Cycom.

A home star is the only star at which TAs may be developed.

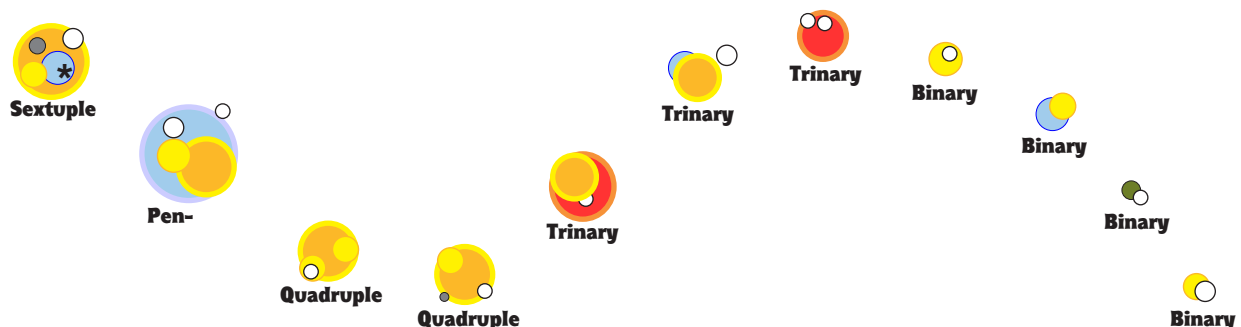
MT production from all stars is routed to IMLO Bank and is available for use at any time at any production center star, including the home star. These are the only stars that can build things.

A home star or production center star cannot build anything if an enemy warship is able to remain within its own gun range of the planet of value after battles have been resolved. The home star has 1 defending GU, which may be destroyed by enemy gunfire if all defending ships and facilities have been destroyed first. The loss of that GU (at the home star) results in the entire empire going neutral, which eliminates the player from the game. All ships and factories belonging to the vanquished empire vanish.

A home star or production center star can repair any number of ships per year if the ship(s) spend one full year at the planet of value in a helpless status. Rules for repairing ships are on page 92.

Xenophobiacs are always located at an unoccupied Multiple Star.

Home star capabilities and production are lost the Cycom after the GOV (page 87) departs. A home star reverts to a 2-MT/year production center star with 2 FY (page 58) after the GOV leaves. See page 87 for the GOV and home star relocation.



Main Sequence Stars – 1-MT/Year

Acronym: ms Players will select a name for their production center stars.

Battle Board: Full planetary system.

Production: 1-MT/year. Can be developed into a production center star by installing factories (FY) (page 58). Production gained by colonizing a main sequence star using 1 Goodie Unit (GU) begins the Cycom after the star is colonized. Production lost because of enemy action begins the Cycom after the loss of the star.

Descriptive: G Class Main Sequence Star (yellow) in SC 10.0.

Narrative: Only colonizable star on the playing map, except for a Multiple Star's home star and a Dead Dwarf production center star (page 107). Produces 1-MT/year if 1 GU is dropped on the planet of value. Returns to neutral if colonizing GU is destroyed by gunfire (range 10 or closer by 5-gun ship or larger) from enemy ship (GU on page 57). Enemy cannot land a GU on a star until the opposing GU is destroyed by gunfire.

An empire may colonize any number of 1-MT/year Main Sequence Stars. However, it will be impossible to defend more than a few of them against aggressive opponents. The cost/benefit ratio is low and it is easy for enemy cruisers to rip through a colonized area, destroy the colonizing GU, and return the stars to neutral.

Only 1 Main Sequence Star per lettered map section (pages 18-43) may be developed into a production center star per player. Opposing players can each create 1 production center star on a Main Sequence Star per map section. In a 5-player game, for example, the maximum number of production center stars (on Main Sequence Stars) per map section would be 5. This limitation does not include Dead Dwarf Stars. If a player loses a production center star (on a Main Sequence Star) to another player, he may build another production center in that map section. If he loses that, he may build a third, etc. This process may result in quite a number of Main Sequence production centers on one map section!

No more than 10 factories (page 58) may be emplaced on a Main Sequence Star.

Main Sequence Stars – Plague Planets

Acronym: m

Battle Board: Full planetary system.

Production: None

Descriptive: G Class Main Sequence Star (yellow) in SC 10.0. Plague Planet stars have the planet of value infested with a fantastically contagious disease of a most violently deadly nature. The incubation period for the disease is to the end of the current cycle of moves. The incurable disease vanishes after the next Cycom (cycle of moves).

Narrative: Each player secretly **plots 1 Plague Planet** on the map before the game starts. The player lists the location of the Plague Planet (and other hazards) and consults that list each Cycom to determine if any ship visits that star during the course of the game. Any ship or fleet entering a star square containing a plague planet is lost at the end of the current Cycom. That player must notify the other player of the loss. See Hazards Chart, page 67.

The player visiting the Plague Planet loses not only his ship or fleet but also half his MT production the Cycom after the fateful visit to the Plague Planet. TA purchases are suspended during that Cycom. Any ship following the lead ship into a Plague Planet is also lost.

Gas/Dust Clouds

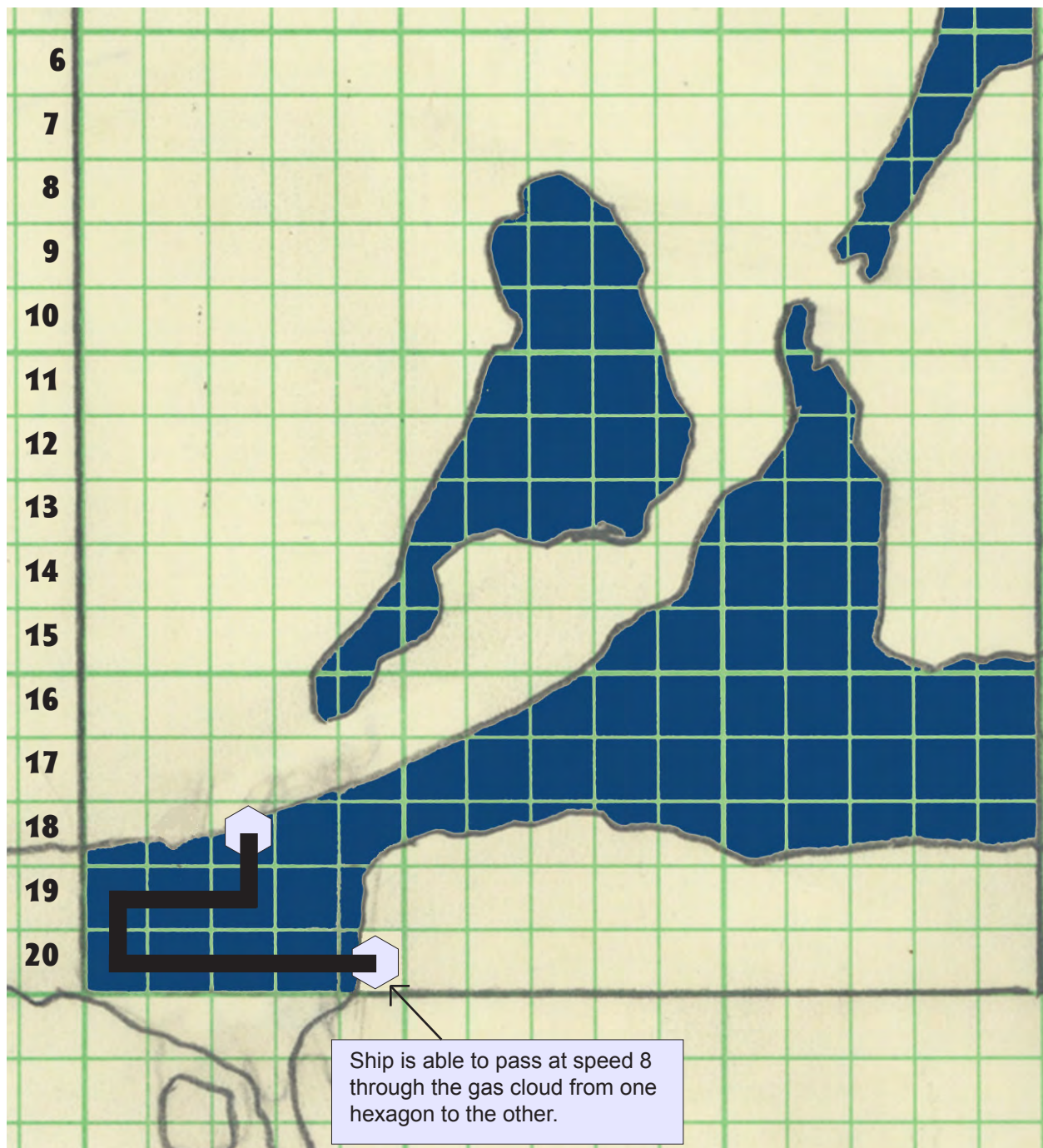
Acronym: None

Planets: None

Production: None

Descriptive: Large and dark-colored amorphous objects that clutter the star chart. Frequently drawn with a “Swiss Cheese” pattern of connecting spherical gaps.

Narrative: Ships/fleets cannot warp either into or over a gas/dust cloud. A ship or fleet can safely warp into a star square that is partially obscured by a gas/dust cloud. Map shows 1 “tunnel” that is an exception to gas cloud impentrability.



Pirate Empires

Names: Pirate, Buccaneer, Privateer, Raider, Corsair, Brigand, Freebooter, Marauder.

Battle Board: Appropriate to the star at which confrontation ensues.

Production: None

Descriptive: Pirate Empires are roaming buccaneers of space that fall upon any ship or fleet that warps into a star within their boundaries.

Narrative: Each player secretly **plots 1 Pirate Empire** on the board before the game starts. A Pirate Empire will consist of 5 stars that should be loosely clumped on the map:

- 1 Red Dwarf
- 4 other stars that may be Main Sequence, T Tauri or Protostars

The player lists the location of the Pirate-infested stars (and other hazards) and consults that list each Cycom to determine if any ship visits that star during the course of the game. Any ship or fleet entering a star square containing a Pirate Empire will be attacked at the discretion of the Pirate as described below. The player who placed the Pirate has the discretion of not telling the intruder of the Pirate's presence. Only the star visited will be revealed to the hapless intruder. Also see Hazards Chart, page 67.

If the Pirate fleet appears to be stronger than its victim, it will attack. If the victim(s) appear to be stronger, the pirates will make every attempt to escape. If a battle results, the player placing the Pirate Empire will be responsible for fighting the pirate's ships.

Any losses a pirate fleet suffers in battle will not be replaced, unless it succeeds in capturing a ship. Captured ships are instantly repaired, upgraded to speed 8 and become part of the pirate fleet.

Each Pirate Empire operates:

8/CA.0***

10/FR.1***

(Note: The *** is TA-302 Mark III Unguided Torpedo)

10/FR.2***

10/FR.3***

Gas/dust clouds do not pose a navigational obstacle to pirate ships (they know the area).

A Pirate Empire and an Amphibian Empire or two Amphibian Empires may overlap, in which case both empires operate normally.

Two Pirate Empires may overlap, in which case only one Pirate fleet will attack an intruder. A player may colonize a Main Sequence star claimed by a Pirate if that player deploys a strong enough fleet to successfully sustain the operation. Even so, the Pirates will continue to operate after a strong colonizing force leaves the area.

Amphibian Empires

Names: Caecilian, Salamander, Phrog, Tode, Mold, Algae, Fungus and Virus.

Battle Board: Appropriate to the star at which confrontation ensues.

Production: None available to players.

Descriptive: The Amphibian Empires are small colonies of space-faring sentiences that are mysterious and peaceful. They do not appear to have ships, although stellar travel is possible by some form of teleportation. The aliens cannot be attacked because they are in cahoots with IMLO and its enforcement fleet. Amphibians' stars cannot be colonized.

Narrative: Each player secretly **plots 1 Amphibian Empire** on the board before the game starts. An Amphibian Empire will consist of 5 stars that should be loosely clumped on the map:

- 1 White Dwarf
- 4 other stars that may be Main Sequence, T Tauri or Protostars

The player lists the location of the Amphibian-occupied stars (and other hazards) and consults that list each Cycom to determine if any ship visits that star during the course of the game. See Hazards Chart, page 67. Any ship visiting one of their stars is granted 2 Technological Advancements of the visiting player's choice the Cycom after contact and is told never to come back. The TA choices cannot be taken later. The TAs taken must be in order in that a Mark III weapon, for example, cannot be taken if the Mark II has not already been developed. However, sequential TAs can be taken, so that a Mark II and Mark III could be accepted simultaneously.

The location of the Amphibian Empire star visited is provided to the visiting player, who must never again visit any of that Amphibian Empire's stars under penalty of severe IMLO retribution (page 108). Only the star visited will be revealed to the lucky intruder. Subsequent visits will not earn free TAs and the visiting ship will be lost. Risk of loss does not apply to multiple visits made during the first encounter.

Gas/dust clouds may separate Amphibian-held stars (they know the area).

A Pirate Empire and an Amphibian Empire or two Amphibian Empires may overlap, in which case both empires operate normally.

A player who places an Amphibian Empire may also visit that empire to acquire the two freebie TAs. Logic suggests that a player place his Amphibian Empire near his home star.

Xenophobiacs

Name: Xenophobiac as in 10/XX.34, etc.

Battle Board: Located at a Multiple Star. May not be at any player's home star.

Production: None

Descriptive: Xenophobiacs are massive war machines left behind by the genocidal Xenophobic Empire of antiquity, an empire noted for its intolerance of certain life forms and intemperate manner of dealing with factions within its own ranks.

Narrative: A Xenophobiac has 24 guns, speed 10 on the battle board, no warp capability and no TAs. It will repair itself after a battle it survives. It cannot be hulked and captured, but it can be destroyed.

Each player **plots 1 Xenophobiac** at a Multiple Star before the game starts. See Hazards Chart, page 67.

The player will consult his Hazards Chart each Cycom to determine if any ship visits that star. Any ship or fleet entering a star square containing a Xenophobiac will be attacked – no exceptions. A player placing a Xenophobiac is responsible for fighting it.

Chapter 4

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Charts & Bookkeeping

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Calendar

Each warp move on the star chart consumes one year. A cycle of moves consumes four years, or Cycom. There are 16 Cycoms in a Katun. The starting date for every game is the year 17,041, which in game play becomes year 1.

Dates are written as letter/numeric abbreviations. For example, Katun 1, Cycom 10, year 4 would be KCY-1/10/4. Katun 4, Cycom15, year 1 would be KCY-4/15/1. The KCY acronym need not be applied. Each move on the battle board consumes no calendar time.

Megatons (MT)

The basic unit of production is in the form of megatons (MT), which are also the SC 10.0 monetary units. Colonized Main Sequence stars, for example, produce 1-MT per year. The cost of a ship is calculated in MT as is the cost of a technological advancement (TA).

Production from a colonized star begins the cycle of moves (Cycom) after colonization. Production ceases at the end of a Cycom in which a star is lost.

MT allocations are made through the IMLO Bank (page 108), which means that any amount of MT earned can be allocated to any production center star at any time. MT are always in a no-fee checking account at IMLO Bank, which a player can access at any time.

Goodie Units (GU)

A Goodie Unit (GU) is a boatload of crap dumped on a colonizable planet to get the semi-sentient life forms to produce goods and services for your empire. A GU consists of cheesy glass beads, wampum belts, candy, a clone factory, addictive drugs, 100 commoners, a dozen noblemen and a clutch of incredibly charismatic Kaminvoo priests who have an endless supply of idle promises.

Each GU costs 16 MT. Only 1 GU is used to colonize a previously uncolonized star's planet of value. A star may not be colonized with more than 1 GU. A merchant ship warps into a colonizable star, lands on the planet of value, drops 1 or more GU, and is free to warp out the next year. A merchant ship may shift cargo to another merchant ship as long as both ships are in the same star square either in deep space or at a star. No time required for cargo transfers, loading GU or for storing GU.

Whenever a GU is landed at a planet of value it is assumed to be for colonization. GU cannot be dropped for storage. Colonization GU may never be picked up to be used elsewhere.

A GU used for colonization at a Main Sequence 1-MT star, Dead Dwarf production-center star or home star can only be neutralized/eliminated by an enemy ship (any 5-gun ship or larger) firing 5 or more guns simultaneously from range 10 or less at the planet of value. Any Factories on the planet of value or ships under construction go neutral. They will become fully functional for the first empire to recolonize the star with 1 GU.

Factories (FY)

A Factory (FY) is used to make Goodie Units (GU), ships and other items. The number of FY at a colonized Main Sequence star determines how much industrial capacity is at that star. Each FY costs 16 MT. Cargo space required to transport an FY is the same as a GU. FY are best installed in pairs, but may be carried singly.

A colonized Main Sequence star that has 2 or more FY is able to produce more FY on site. The home star starts with 8 FY and maxes out at 20; a colonized Main Sequence Star may never have

more than 10 FY and a Dead Dwarf Star no more than 14. A colonized Main Sequence star (1-MT/year) becomes a production center star merely by having a cargo ship drop off FY at the planet of value. No unloading time is required. GU and FY can be dropped simultaneously. The GU and FY become functional the Cycom after drop off.

An FY builds anything instantly, except ships (page 88 and others) and technological advancements (page 100). Ships of any size that are built during one Cycom (always on year 1) are commissioned and put into service the first year of the next Cycom. Ships under construction can be destroyed by an enemy warship with 5 or more guns approaching to within range 10 of the planet of value.

The FY installed at a production center star cannot be destroyed. A production center star goes neutral if its 1 GU is destroyed by gunfire. The star begins producing for its new owner with all its FY intact after the star is recolonized with 1 GU.

Only 1 Main Sequence Star per lettered map section (pages 18-43) may be developed into a production center star per player. Opposing players each can create 1 production center star on a Main Sequence Star per map section. In a 5-player game, for example, the theoretical maximum number of production center stars per map section would be 5. This limitation does not include Dead Dwarf Stars or a player's home star.

Number of Factories	Star's MT Output	Max. MT/Cycom Industrial Capacity
2	2-MT/year	16 MT
4	4	32 MT
6	6	64 MT
8 Home Star @ Gamestart	8*	**128 MT
10 Max. @ Main Sequence Star	10	256 MT
12 Max. @ TA-700 Geode Moon	12	512 MT
14 Max. @ Dead Dwarf Star	14	1000 MT
16	16	2000 MT
18	18	4000 MT
20 Max. @ Home Star*	20	8000 MT
<p>* A player's home star produces 8-MT/year or 2-MT/Cycom at gamestart. If a player builds 6 more Factories in the first Cycom, production will rise to 14-MT/year or 56-MT/Cycom. At its maximum, the home star can produce 20-MT/year or 80-MT/Cycom.</p> <p>** The industrial capacity of the home star to build GU, FY or ships cannot total more than 128 MT the first Cycom. If a player builds 6 more Factories in the first Cycom, manufacturing capacity rises to 1000 MT. Capacity does not equal IMLO Bank balance. You must have the MT (money).</p>		

Warp Juice (WJ)

Warp Juice (WJ) is the energy source that powers the warp drive engines in fleets of ships. Each player's empire produces enough WJ to warp 4 fleets per Cycom. Each TA-100 Warp Juice Mining Module (wjmm) can mine enough WJ at a Magnetar to power 4 additional fleets containing any number of ships in warp drive. A WJM at a Pulsar will produce WJ for 1 fleet. A WJM at a Neutron Star will produce WJ for 2 fleets. The WJM must spend a full Cycom at the Magnetar/Neutron Star/Pulsar to mine Warp Juice.

Bookkeeping

The forms on the next several pages illustrate the bookkeeping necessary to a well-run empire of acquisition, conquest and turmoil in Space Centurions 10.0. It is good to fill out the forms in the old-fashioned way with pencil and paper. Slap the blank forms on a copy machine and run off a bunch.

Each player must keep an up-to-date list of technological advancements. Use chart below.

TAs Purchased _____ (Empire)

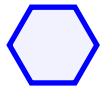
[illegible]

Income - All Stars

Katun:



Cycom:



Empire: _____

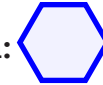
Home Star →

	Star's Coordinates	Type of Star	No. FY (if any)	No. GU	Star's MT Output Per Year	Star's Total MT Output Per Cycom	Fleet Number (if any)
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
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31							
32							
33							
34							
35							

Income from
Home Star:Income from
production center
stars:Income from
1-MT/year stars:Income from
Bluu/Radd
Mining Ships:Income from
Hyggyns Mining
Ships:Income from
EDEN Project:Subtract 10% of
income if TA-34
is not kept up:Total MT Available
For **Next** Cycom:

Income - All Stars (continued)

Katon:



Cycom:



Empire: _____

	Star's Coordinates	Type Star	(If any) of GU FY	No. No. MT Per Year	MT Per Cycom	Fleet Number (If any)
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
53						
54						
55						
56						
57						
58						
59						
60						
61						
62						
63						
64						
65						
66						
67						
68						
69						
70						

**Stars Newly Mined or
Colonized This Cycom**

Star: _____

Fleet: _____

GU: _____ # FY: _____

Hop: _____ Bluu/Radd: _____

Star: _____

Fleet: _____

GU: _____ # FY: _____

Hop: _____ Bluu/Radd: _____

Star: _____

Fleet: _____

GU: _____ # FY: _____

Hop: _____ Bluu/Radd: _____

Star: _____

Fleet: _____

GU: _____ # FY: _____

Hop: _____ Bluu/Radd: _____

Star: _____

Fleet: _____

GU: _____ # FY: _____

Hop: _____ Bluu/Radd: _____

Star: _____

Fleet: _____

GU: _____ # FY: _____

Hop: _____ Bluu/Radd: _____

Star: _____

Fleet: _____

GU: _____ # FY: _____

Hop: _____ Bluu/Radd: _____

Star: _____

Fleet: _____

GU: _____ # FY: _____

Hop: _____ Bluu/Radd: _____

Star: _____

Fleet: _____

GU: _____ # FY: _____

Hop: _____ Bluu/Radd: _____

Star: _____

Fleet: _____

GU: _____ # FY: _____

Hop: _____ Bluu/Radd: _____

Output This Cycom: **ZERO!!**

Treasury

Empire Name: _____

Katun:



Cycom:



Surplus From Previous Cycom: _____ MT

Income From Previous Cycom: _____ MT

Total MT Available for this Cycom: _____ MT

All MT are at IMLO Bank and are available to any production center star at any time.

Expenses

[illegible]

Fleet Inventory

Empire: _____

[illegible]

Warp Juice Production

Katun:  **Cycom:** 

Empire: _____

[illegible]

Magnetar supports 4 fleets

Neutron Star supports 2 fleets

Pulsar
supports
1 fleet

Hazards Report

Empire: _____

Hazard	Star Location(s)
Plague Planet	
Xenophobiac	
Amphibian Empire	
Pirate Empire	

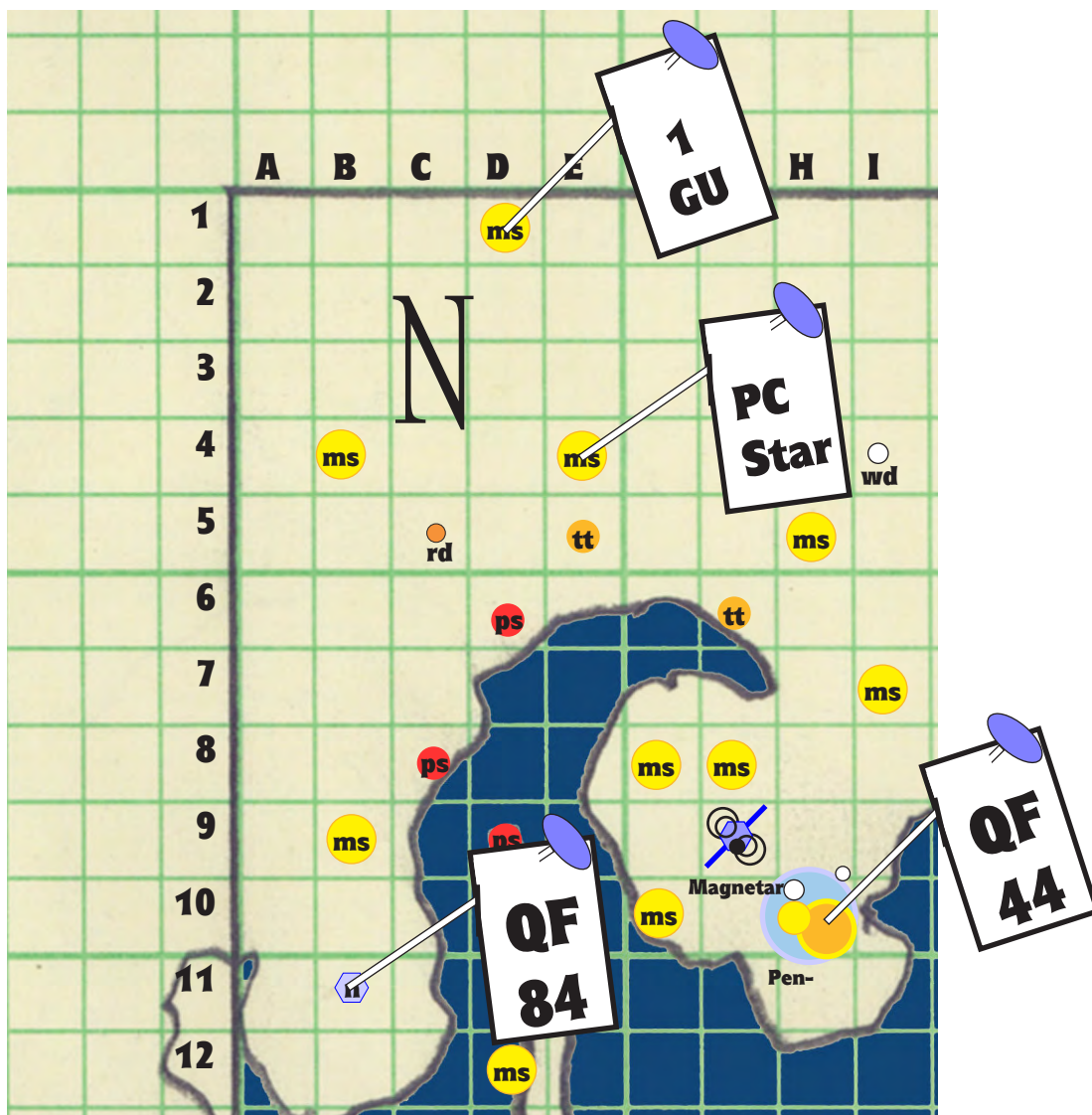
Players are encouraged to exchange Hazards Reports before each game begins to prevent a hazard from “relocating” at a strategic moment. These Hazards Reports are to be provided in a sealed security envelope from each player to each other player and may not be opened until after the game ends or an empire dies.

Your 1 Plague Planet must be at a Main Sequence star.

Your 1 Xenophobiac must be at a Multiple Star, but not a home star.

Your 1 Amphibian Empire must be at 1 White Dwarf (not on 10 row) and 4 other stars consisting of any combination of Protostars, T Tauri Stars or Main Sequence Stars.

Your 1 Pirate Empire must be at 1 Red Dwarf (not on 11 row) and 4 other stars consisting of any combination of Protostars, T Tauri Stars or Main Sequence Stars.



The star chart must be consulted to find interactions between moving fleets vs. colonized stars or standing fleets. Players must use color-coded pins to indicate stars visited, stars colonized and hazards. Fleets are assigned numbers and are indicated by small flags pinned into the map. GU, hazards and production center stars can be identified by the same method if color-coded pins are too annoying.

Economic Development Strategy

Goodie Units (GU). Each player must begin the economic development of their empire by dropping 1 GU (page 57) on nearby Main Sequence Stars. An early offensive tactic is to attack and neutralize enemy stars as soon as a 5-gun marauder can be built and deployed.

Factories (FY). Transport and install 2 FY (page 58) at an already colonized Main Sequence star, which turns the star into a production center. As finances allow, more factories will be built at the production center star. Production center stars become a high priority target, so must be limited in number and defended.

Bluu/Radd Mining. TA-107 Bluu Mining Module and TA-108 Radd Mining Module (page 130) form a team that produces bluu/radd (page 46) worth 10-MT/year or 40-MT/Cycom. Mining ships must be paired, one each at a Blue Giant, Blue Supergiant, Red Giant or Red Supergiant. These mining ships provide a good source of income because of the resources required to find and destroy them.

Asteroid Miner. The TA-750 Asteroid Miner wanders around mining uncolonized Main Sequence Stars or unoccupied binary stars. Each AM produces 8-MT/Cycom and will pay for itself in 5 Cycoms. A reward of 20 MT is earned for each Asteroid Miner destroyed.

Hop Mining. The TA-101 Hyggyns Mining Ship (page 127) extracts a highly addictive drug that enhances worker productivity. Earn 1-MT/year from a Protostar or T Tauri star. A good source of income because they are difficult to destroy.

Planet Butcher. The TA-103 to 104 Planet Butcher series can earn substantial amounts of income and will pay for itself quickly. It will hardly bring praise to your empire because the butchering process makes a main sequence star worthless. Earns 60, 90 or 120 MT per star butchered, depending on mark of miner.

Eden Project. The TA-106 Extreme Deification and Exploitation of Nirvana (Eden Project) (page 129) can cause a T Tauri star to produce 32-MT/year. High income but draws predators from all corners of the galaxy.

Archaeology. TA-107 Archaeology Research Craft – White and TA-108 Archaeology Research Craft – Red combine to seek out technology at White Dwarf and Red Dwarf stars left behind by dead civilizations. Deployment of an ARW and ARR team can significantly accelerate an empire's economic and technological advancement.

War Strategy

The only good defense is a powerful offense. The empire that manages to develop the most effective attack against an opposing empire's economic base almost surely will win. TA-116 Raider (page 131) may play a central role in a successful attack plan. A high mark of the TA-499 series of Ambush Drives (page 214) also will be useful. Weapon systems that come in 26 marks should be studied carefully.

Important defensive weaponry includes:

- TA-122 Solar System Defense Ship (page 134)
- TA-190 Heliostatic Hellfire Machine (page 143)
- TA-192 Moon Fortress (page 145)

Chapter 5

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Navigation

&

Solar Systems

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Navigation

Each warp move on the star chart takes 1 year. A cycle of moves, or Cycom, consumes 4 years. Ships do not actually enter each star square along their course, but appear only in the star square they are in at the end of each year's move. When a player writes his moves he will use the format shown below and the form on page 64. Ships may not warp over gas clouds; they must go around. Any horizontal/vertical movement consumes 1 movement factor and any diagonal movement consumes 2 movement factors per square.

QF-70

8/CA.12***|ad|rd|td

6/C.20ad|rd (4 GU)

Start: K-14H

14/1 6 to star K-14N

14/2 6 to star K-8N – Drop 1 GU

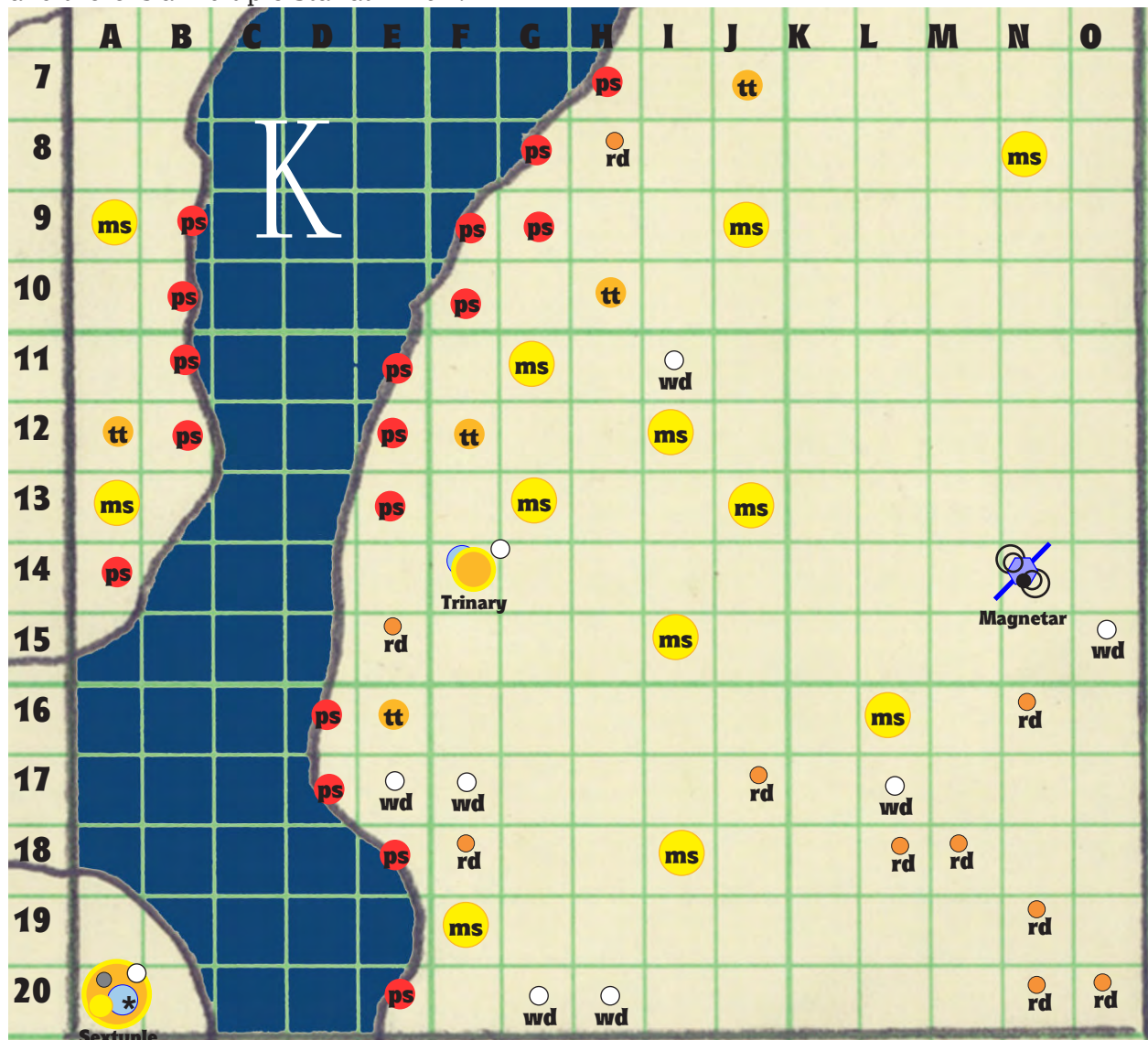
14/3 6 to K-10K

14/4 6 to K-14H (3 GU left)

The Katun is noted at the top of the form on page 64. The Cycom and year are noted with each move, which is 14/1, 2, 3 and 4 as shown above. See Calendar, page 57.

Warping a fleet into a star causes a “warp ripple” that is detectable by all other stellar empires. Players must exchange locations of each warp into a star (see top of page 72).

The location of a star square is determined by its coordinates. A look at a portion of a star chart, below, reveals only the colorful star symbols. The Magnetar is located at K-14N and there is a Multiple Star at K-20A.



Warp Ripples

Warping a fleet *into a star* causes an empire- and fleet-specific “warp ripple” that is detectable by all other stellar empires. Players must exchange star number locations of each warp in, but not warp outs, each Cycom. Deep space warps are not listed. Each line on the Warp Ripple Report (page 65) lists just one fleet’s activities as loosely depicted below.

Example:

Year 1	Year 2	Year 3	Year 4	
998		788		
3	1017	790	212	(one fleet per line)
309		642	393	

After warp ripple information is exchanged, more information is exchanged by players, as per rules on page 73. See warp ripple reporting chart, page 65.

Transiting a Star

A fleet may wish to warp into a star, but not approach the planet of value. Transit means the ship or fleet warps onto the battle board at range 200 at the established direction from the planet of value and then proceeds at maximum speed away from the planet. The ship will warp out immediately. The orders for the fleet must include the word “Transit.” A transit causes a reportable warp ripple and protects against the effects of a Plague Planet, but does not reveal the plague’s presence. Other hazards act normally.

Warp Movement vs. Warp Juice

Each empire may move 4 fleets per Cycom. One fleet cannot split warp juice with another fleet by warping the first 2 years of a Cycom and letting another fleet have the second 2 years. A moving fleet may pick up a standing fleet mid-Cycom and both continue as one fleet without increasing warp juice use. Similarly, a warping fleet may drop off ships. Movement of the Seat of Government Ship (GOV, page 87) does not disrupt warp juice production. Warp movement of more than 4 fleets per Cycom requires use of 1 or more TA-100 Warp Juice Mining Modules.

Changing Fleet Orders

Fleet orders may be changed after a battle from those originally given. Generally this is limited to moving ships a single warp jump toward a repair ship, a production center star or simply to a deep space star square. The ships will then stand until the end of the Cycom.

Contingency Orders

Contingency orders might also be labelled “if” orders. The player tells his fleet, “If such-in-so happens, my fleet will follow alternative orders number two.” Those alternative orders must be based upon what the fleet encounters during the current Cycom.

Not allowable is providing orders for one fleet contingent upon what happens to another fleet that does not precede the first into the same location.

Enemy Contact

Opposing ships will face each other on the battle board if the 2 ships are at the same star at the end of the same year (see Warping onto Battle Board, page 81). Only friendly ships can meet in deep space.

Enemy Contact Reports

Meeting at a Colonized Star. After players exchange warp ripple information (pages 72 and 65), players exchange more information as follows:

1. The owner of a colonized star that received a warp ripple report tells the owner of the visiting ship the following information:
 - Name of empire that has the star colonized
 - Speed and size descriptions of all standing ships present, if any. No ship TAs visible.
2. The owner of the visiting fleet supplies speed and size information of every ship in his fleet(s) but not direction(s) of entry or TAs carried. Defending GU on the star is destroyed if defending ships, if any, cannot prevent a 5-gun warship or larger from approaching to within range 10 of the planet of value and destroying the GU with gunfire.
3. Players decide if a battle will take place. If so, a planet of value system (pages 74-79 and 85) is drawn. Ships are spotted on the Battle Board (page 81) and combat commences (page 83).

Meeting at an Uncolonized Star. Players simultaneously exchange ship size and speed information, but not TAs carried. Decide if battle commences. If battle, determine directions of approach and start fighting. TAs and TA mark become apparent to the enemy as they are used

Following Fleets. Ship-to-ship communications are instantaneous via a directional, echoically-mendated/echoically-nattered, telepathic, endoscopic deletrium (DEMENTED) signal. Messages go only to following fleets that will enter that same Cycom to the exact location of the ship sending the message. Messages are not relayed to other fleets. The following fleet may stop until the end of the current Cycom if danger lies ahead. The Plague Planet (page 50) is an exception.

Message from Battle Area. An unengaged fleet will not enter a star square that is the site of a confrontation between two opposing sides, one of them friendly, that was fought during the current Cycom if the enemy at that site was such that battle would not have been accepted by the approaching fleet. This includes all fleets programmed to enter that star square any time during the remaining portion of the current Cycom starting the year before they would have entered the star square of the confrontation and will remain there until the end of the current Cycom.

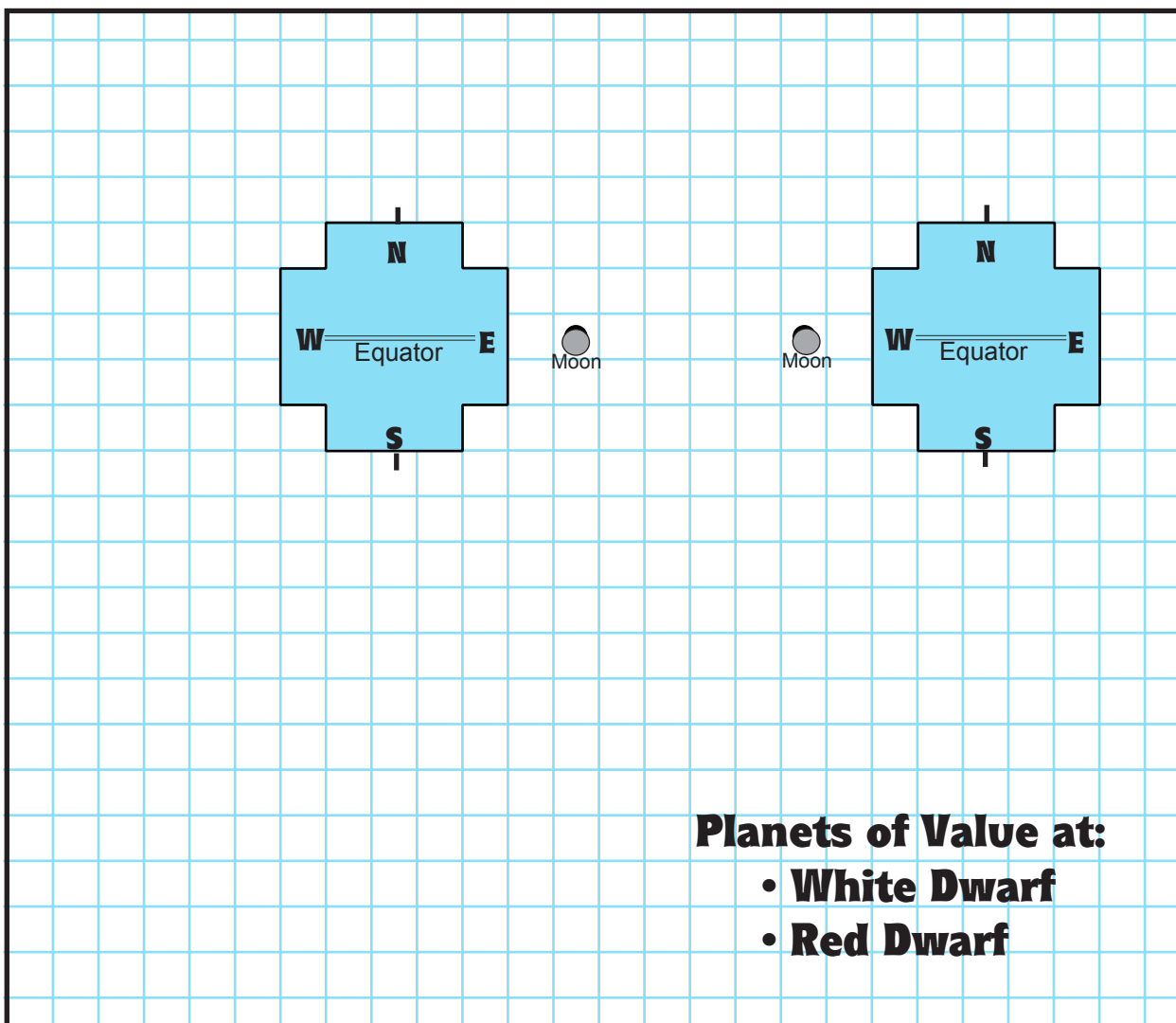
Solar Systems

Planet of Value. Whenever a confrontation occurs at a star, several celestial objects, such as planets, moons, moonlets, rings, magnetic fields and Neutron Stars will appear on the battle board. This setup depicts the “planet of value” and functions as the battle board. The planet or Neutron Star will always be at the center of the battle board with the moons and other objects placed nearby. The drawings below and on the following pages depict all the possible battle boards. Planetary and Neutron Star systems will be drawn on 4-, 5- or 6-squares to the inch graph paper.

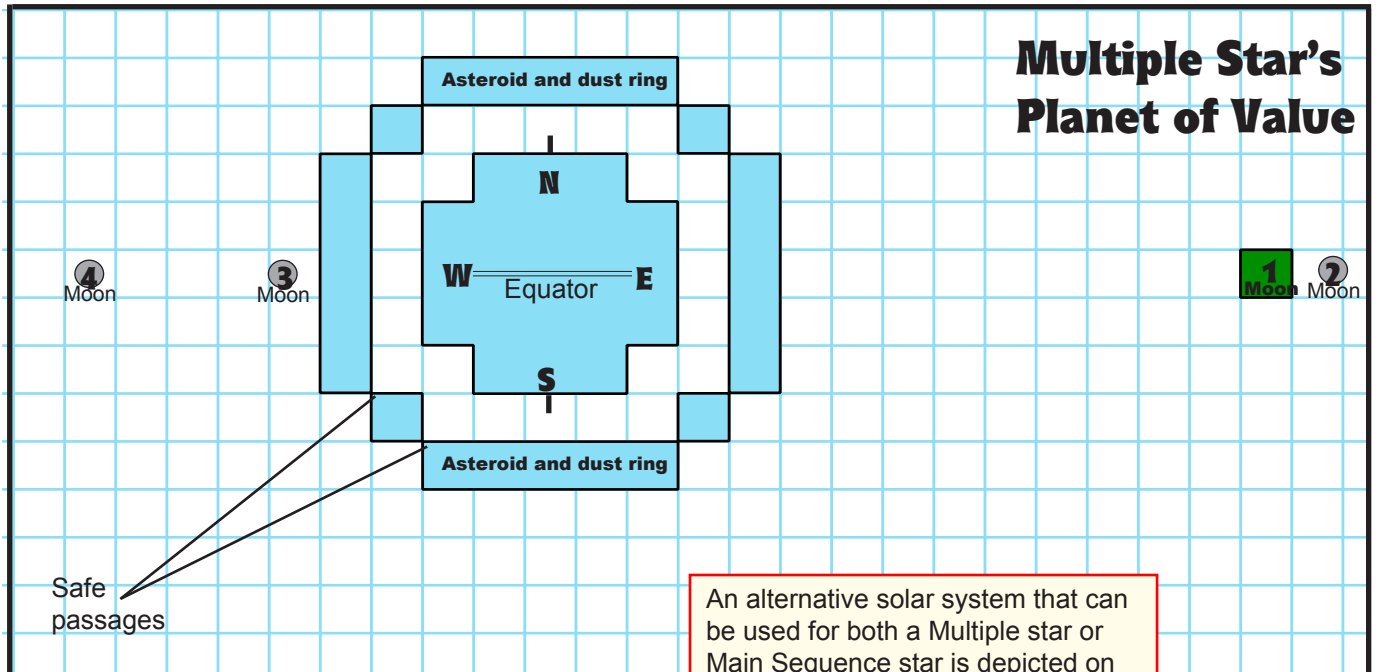
Landing on a planet. Only the player who has a star colonized may land on the planet of value. Any player may land on a planet of a neutralized or uncolonized planet of value and its associated moons.

Procedure to land on a planet. Move the ship to any battle board square occupied by the planet or moon and state that the ship has landed. To take off after a 1-move delay, a ship moves away from any side of the planet at any speed. This can be a useful battle tactic.

Landed during battle. A landed ship cannot use any weapons or defense. If one gun is fired at a landed ship it becomes a hulk. A second gun fired destroys the hulk.

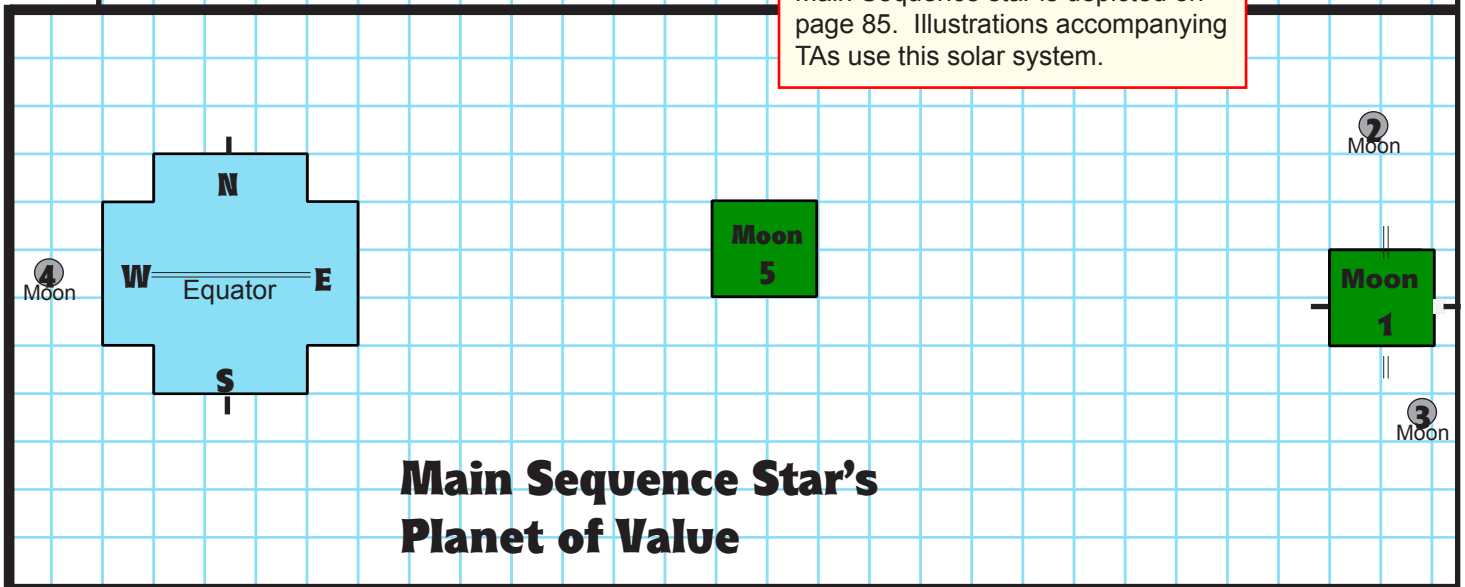


Multiple Star's Planet of Value



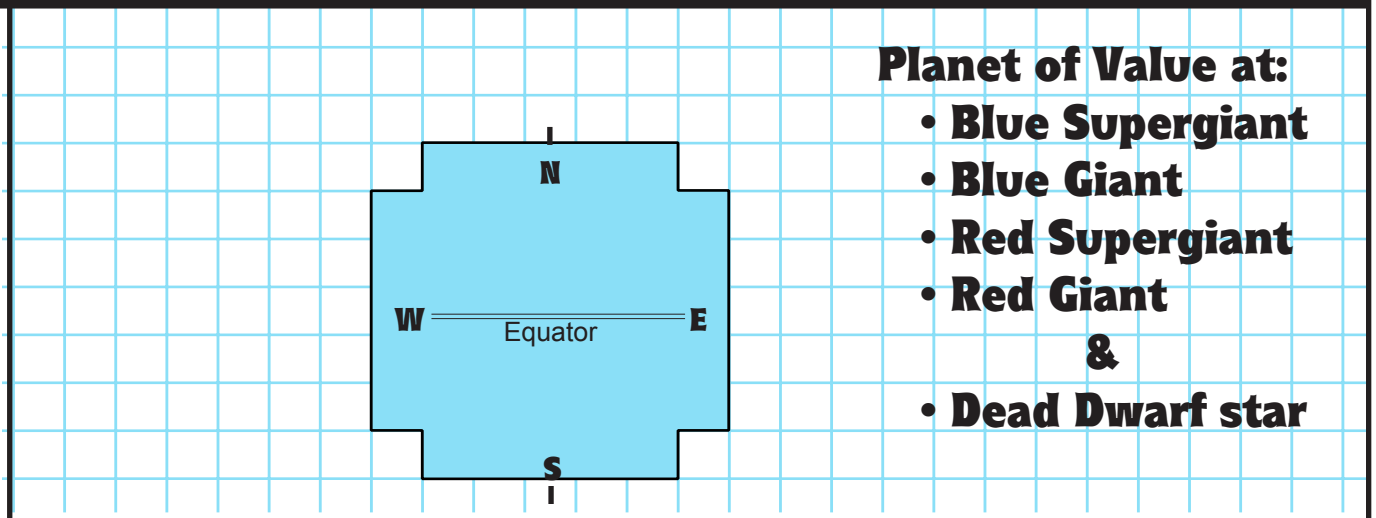
An alternative solar system that can be used for both a Multiple star or Main Sequence star is depicted on page 85. Illustrations accompanying TAs use this solar system.

Main Sequence Star's Planet of Value



Planet of Value at:

- **Blue Supergiant**
- **Blue Giant**
- **Red Supergiant**
- **Red Giant**
- &
- **Dead Dwarf star**



Note: This drawing depicts a small star, not the planet of value. Ships cannot land on the star!

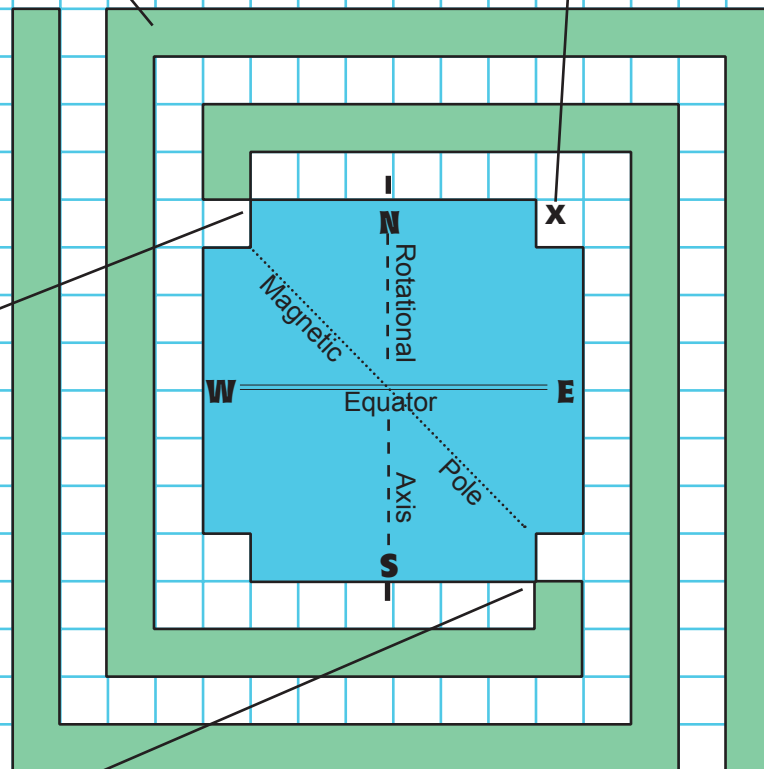
Star Genesis of:

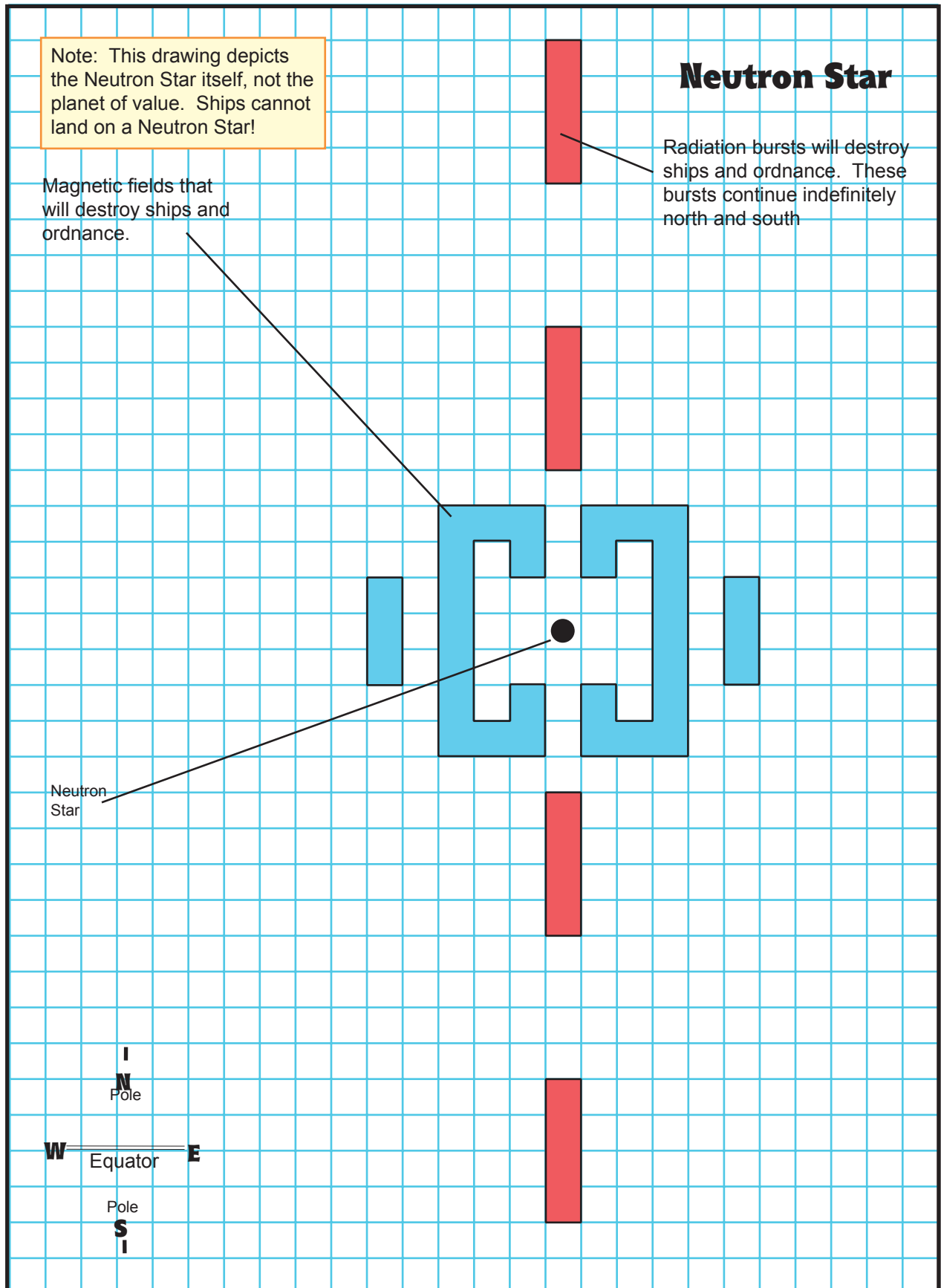
- **Protostar**
- **T Tauri Star**

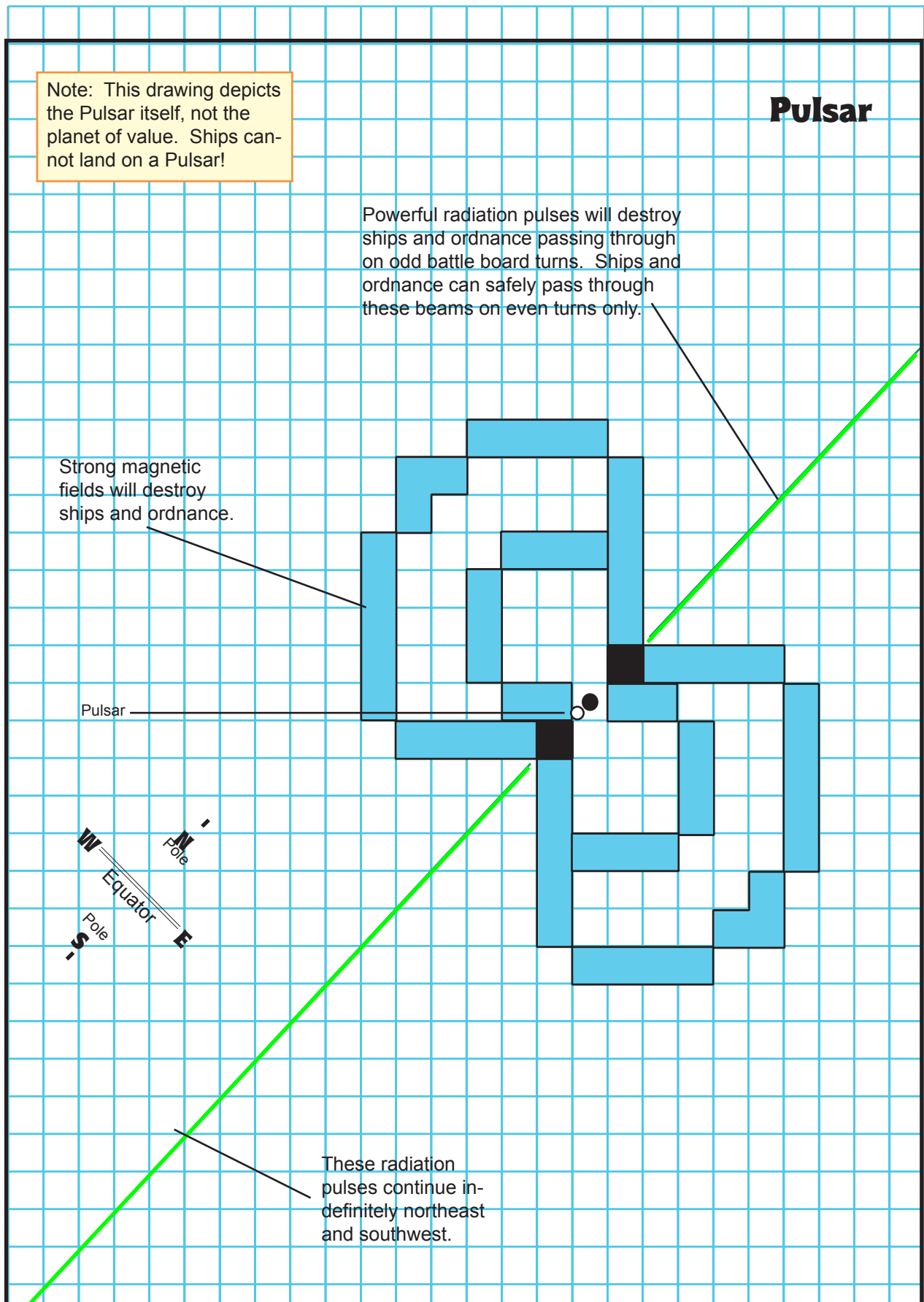
Heavy bands of dust, asteroids, light radiation, magnetism and plasma – impenetrable!

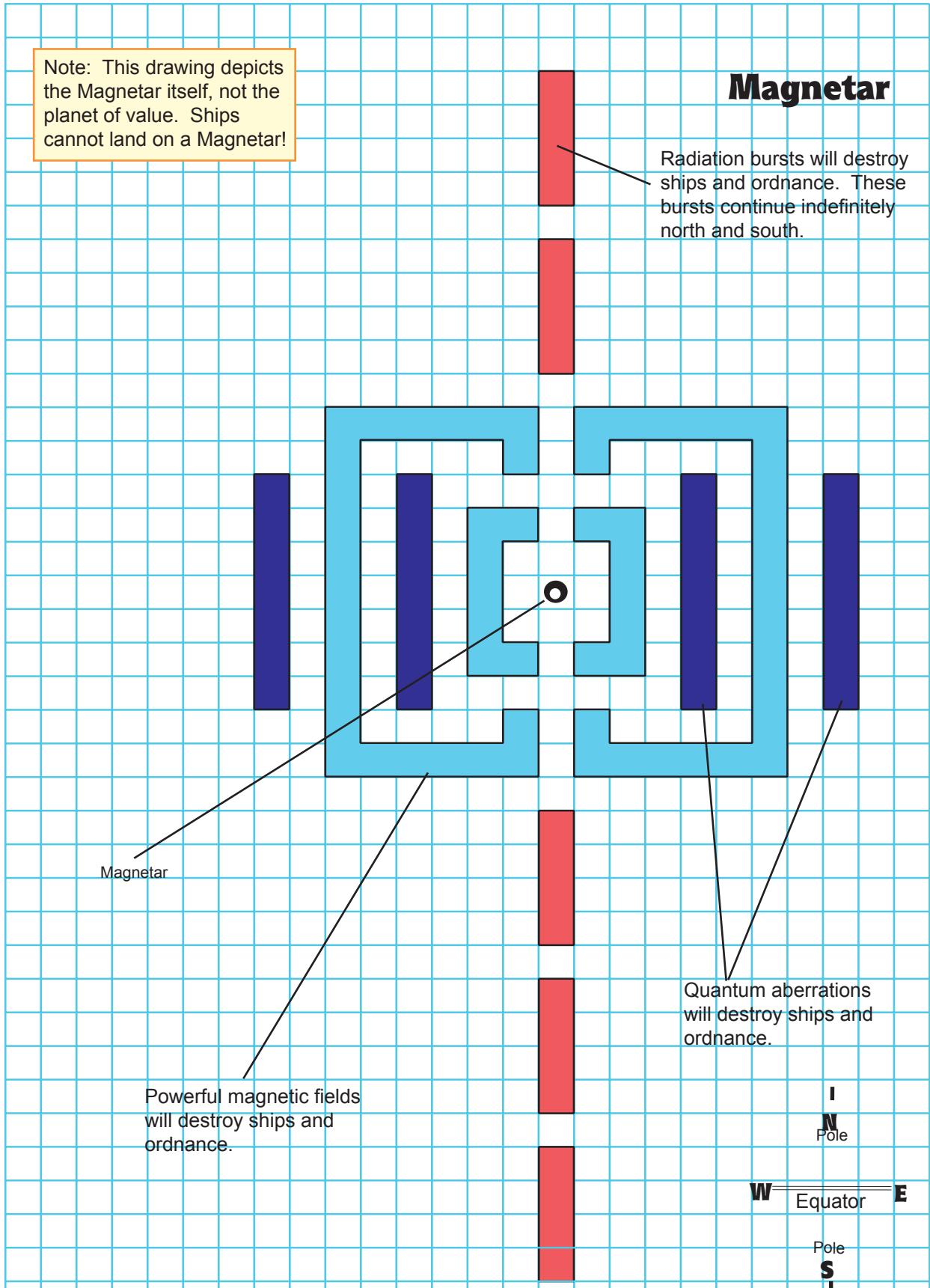
X marks the spot TA-101 Hyggyns Mining Ship stands to conduct its mining operations.

Open Passages









Battle Board

What it is. The battle board is an area that encompasses all ships warping into a planetary system. It is best made of 4 squares to the inch graph paper, although 5 or 6 squares to the inch will work. Visibility is to the limits of the battle board, which will be extended indefinitely in any direction to accomodate the drift of battle.

Warping in. There are 8 major directions on a battle board and initial placement of ships entering the battle board will be along one of those directions. The exact direction and distance from the planet of value is described on page 81. The year a ship warps in does not count as a full year for mining (wjm, HMS, etc.), governing (GOV) or ship upgrading purposes (page 112).

Initial move. Movement away from initial positions may be at any speed and in any direction, but must be made the first move after warp in. See TA-499 for exception.

Warping out. The only way ships can travel to another star square is by using warp drive. Departing a star square is called warping out. To do so, a ship must enter “pre-warp.” The year a ship warps out does not count as a full year for mining (wjm, HMS, etc.), governing (GOV) or ship upgrading purposes (page 112).

Pre-warp lasts 8 moves on the battle board. While in pre-warp, the ship may not move or use any offensive or defensive weapons. A ship in pre-warp may not be attacked by any weapon because the ship is a “ghost” through which objects pass without collision.

A ship that has entered pre-warp may not reverse the procedure of its own volition. However, any object within 2 movement factors will prevent a ship from entering pre-warp. Also, any warship within its own gun range of the ship wishing to enter pre-warp may deny that right by simply so stating.

Any object approaching within 2 movement factors after pre-warp has begun will cause the ship in pre-warp to reappear normally on the battle board. An “object” is practically anything: torpedos, ships, planets, moons, radiation belts, etc., but not guns. A ship forced out of pre-warp will reappear normally on the battle board to begin the next move. A ship must delay 1 move before it can again enter pre-warp. Collisions are not allowed on the same move a ship is forced out of pre-warp.

A ship can enter pre-warp from any speed. A ship forced out of pre-warp may resume movement at any speed and in any direction of its choosing. Illustrations on page 82.

All ships on the battle board will be notified when a ship enters pre-warp. A ship is removed from the battle board when warp out is completed.

Warping onto Battle Board

Ships **warp** into a solar system (pages 73 and 78) in an unpredictable direction from the edge of the planet of value. Roll a 6-sided die for each ship warping into a system:

Die roll: 1 – 50 - 56 NE
 2 – 50 - 56 E
 3 – 50 - 56 SE
 4 – 50 - 56 SW
 5 – 50 - 56 W
 6 – 50 - 56 NW

A **standing fleet** will be positioned about the planet of value as follows, rolling a 6-sided die for each ship present:

Die roll: 1 – Range 6 NE of planet of value
 2 – Range 5 E of planet of value
 3 – Range 6 SE of planet of value
 4 – Range 6 SW of planet of value
 5 – Range 5 W of planet of value
 6 – Range 6 NW of planet of value

If necessary, reposition standing ships to just outside a planet or star's magnetic field, radiation burst or dust belt

A **hulked ship** or a ship with its engines destroyed drifts to speed 0 into a geosynchronous orbit 4 or 5 squares south of the planet of value (pages 73 and 78). A second such ship would be placed 4 or 5 squares north.

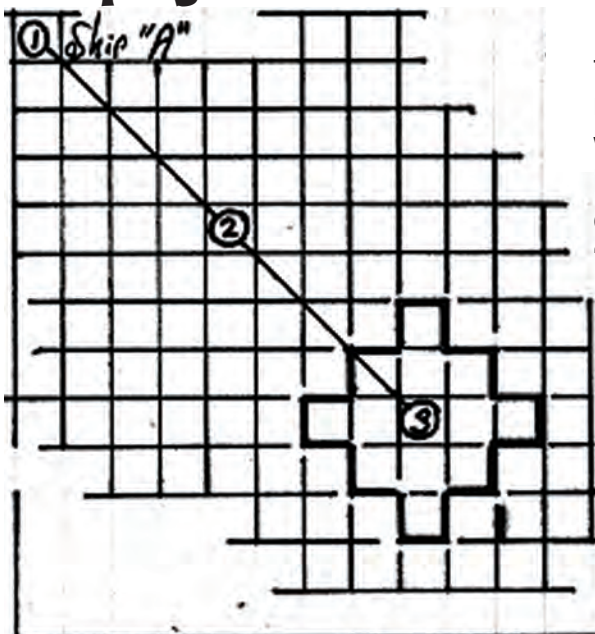
If enemy ships warp into a system **simultaneously**, players will take turns rolling dice for ships' arrival positions. A ship that warps into a position already occupied by an enemy ship will do the following, in order:

1. Move to a S (first) or N (second) position at range 50
2. Double up with friendly ship (roll die until this is accomplished).

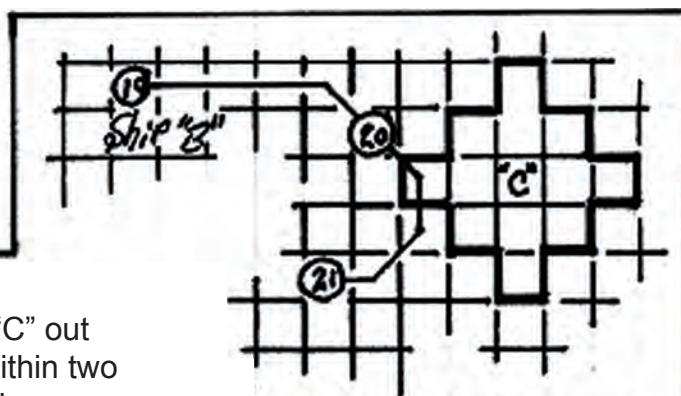
Note that a ship using TA-499 series of **Ambush** Drive (page 214) can be embedded (optionally) in any moon of a star already colonized by that empire. That may create an ugly surprise for an arriving ship. Also note that a ship without engines becomes a hulk the Cycom after it was damaged.

See TA-60 series of Fleet Formation Keeper TAs on page 119 for expensive ways to reduce the warp-in disorganization.

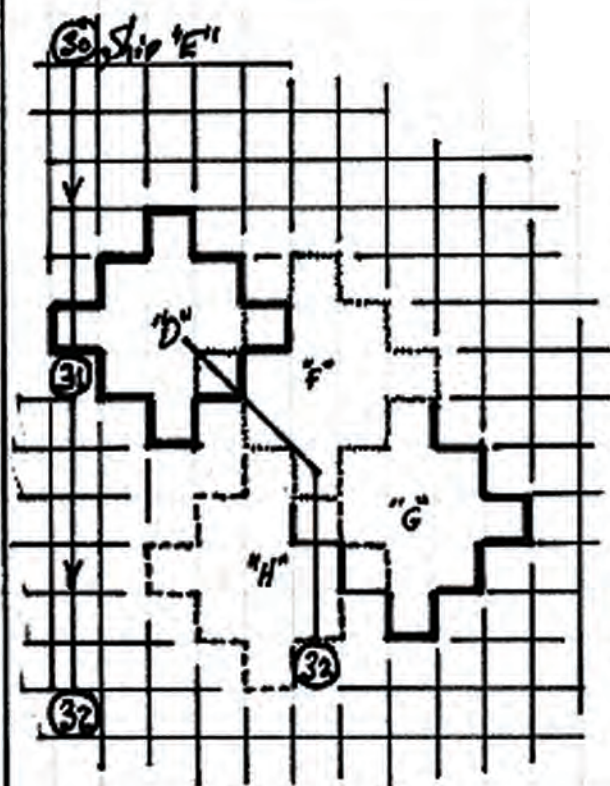
Warping off Battle Board



In the illustration at left, Ship "A" moves to its warp out position on move 3. On moves 4, 5, 6, 7, 8, 9, 10 and 11, Ship "A" will be in pre-warp and any object entering any of the battle board squares enclosed by the heavy line will force Ship "A" out of pre-warp.



At right, Ship "B" forces Ship "C" out of pre-warp by approaching within two movement factors of the ship in pre-warp at one point during Ship "B's" movement to 21.



At left, Ship "E" forces Ship "D" out of pre-warp on move 31. Ship "D" upon being forced out of pre-warp must stay where it is on move 31 and is not subject to attack by any weapon. Ship "D" may move on 31 and is at this point subject to attack in a normal fashion. In this example, Ship "D" chose to force friendly ships "F", "G" and "H" out of pre-warp to help in the battle against Ship "E". Providing all other objects are far enough away, Ship "D" may again enter pre-warp, starting with 33. Ship "D" in this example counts move 32 as the one move delay before it can again enter pre-warp.

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On the Battle Board

To start a battle. Each side is shown the initial placement of enemy ships prior to making the first move and are told the nationality, speed and size of each opposing ship. TAs and/or mark of TA become visible only as used in battle.

Battle board movement. Maneuverability using warp drive is unlimited; not so movement on the battle board. Here ships may accelerate or decelerate by only 2 speed factors per turn. This applies even if several speed factors are shot away in one turn. Ships may execute only one 45° turn per battle board square moved through. The course ending a turn is the course starting the next turn. A ship may move off in any direction if it was at speed 0 the previous turn. Diagonal movement still consumes the usual 2 movement factors, horizontal/vertical movement the usual 1 movement factor.

Move-fire sequence during battle. Both players secretly and simultaneously record their next movement (Battle Record, page 91). They then move and secretly and simultaneously record their firing orders. Damage results are computed by the referee and movement resumes. A comprehensive sequence of events is provided on page 93.

Collisions. If two ships end movement into the same battle board square both ships are destroyed. Exceptions: 1- and 2-gun warships lack mass to destroy anything other than themselves or each other in a collision. There are no mid-move collisions.

To end battle. Battle ends when only one combatant remains on the battle board or when neither side is able or willing to press the battle. Actual departure from a star is the year following the end of a battle.

Stalemated battle. One antagonist may be able to prevent the other from leaving a star without risk of defeat. The side unable to depart will stand at range 50 due east of the planet of value until the pinning side departs or reinforcements for either side arrive.

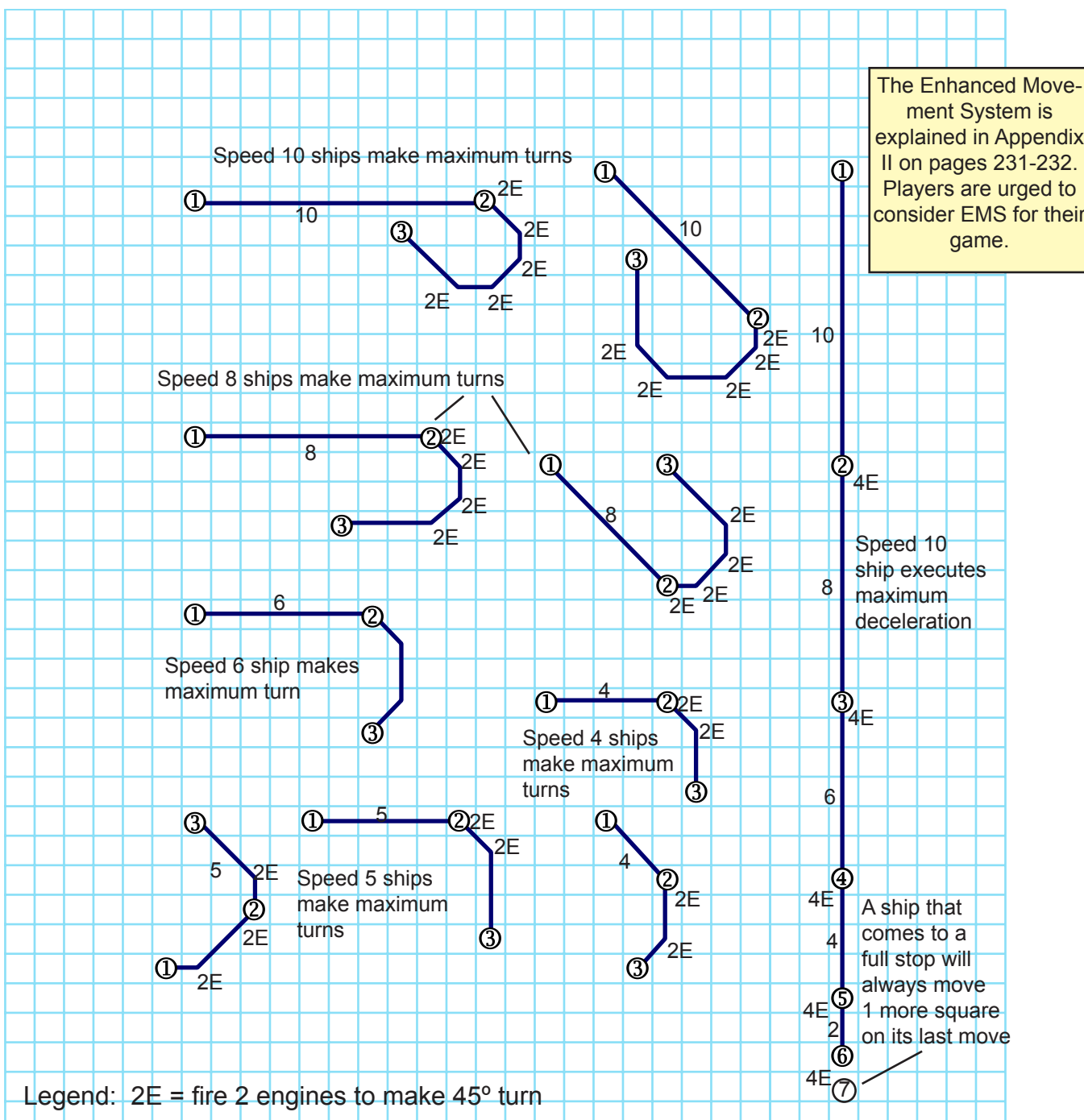
After Battle. Battle stops armed opponents at the star where contact was made until the end of the current Cycom. Non-battle situations allow opponents to continue to the end of the Cycom as originally ordered. Merchant ships proceed to the end of the Cycom unless stopped, captured or destroyed. Battle survivors will continue their mission, if possible, or stand at the battle site to the end of the current Cycom, owner's choice.

A hulked ship or a ship with its engines destroyed drifts to speed 0 into a geosynchronous orbit range 4 or 5 east of the planet of value (pages 73-78 and 85). A ship without engines becomes a hulk the Cycom after it was damaged.

Extended Chase

An extended chase ensues on the battle board when two or more ships have equal speed and one side chases the other. The side seeking to flee cannot enter pre-warp without being overrun by the pursuer, so the chase continues endlessly. This continues until both sides are range 1000 east from the planet of value on the battle board. At this point, the faster of the two ships is given a speed increase of 1. But who's faster? Use this:

1. A larger warship is faster (determined by number of functional guns)
2. An undamaged or least-damaged ship is faster (but any damaged engines loses)
3. A ship with guns is faster than a merchant
4. A ship with the highest mark of TA-499 series Ambush Drives (p.214) is *always* fastest
5. Still can't decide? Flip a coin!



Maneuvering on the Battle Board

Each 45° turn a ship makes requires the firing of 2 engines

Each 1-unit change in speed requires 2 engines

Maximum increase or decrease in speed is 2 per turn, which requires 4 engines per turn

A ship with only one engine remaining may make 1 45° turn per move

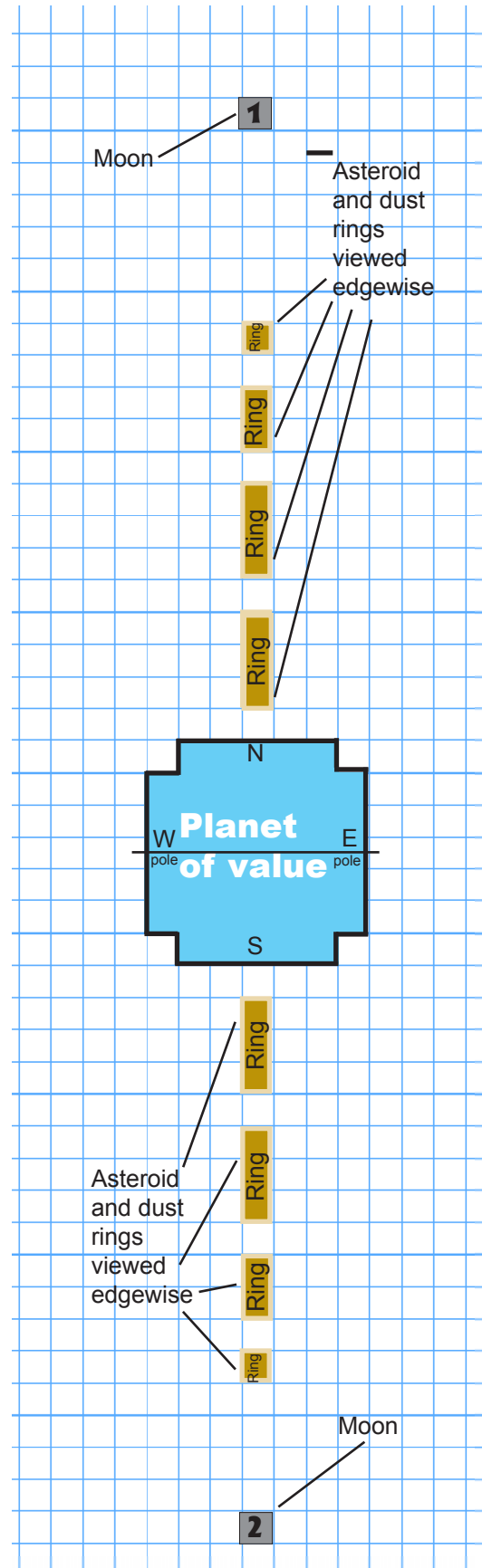
A ship with only 1 engine remaining may change speed by 1 every other move

No change in speed or course requires no engines (duh!)

The HS and LS described in TAs 140-143 have unlimited maneuverability unless hulked.

Alternative Planet of Value for Multiple Star or Main Sequence Star

Illustrations accompanying
TAs use this solar system.



Chapter 6



Ships & Guns



Merchant Ships

Designation	Name	No. of Guns	GU Cargo	Speed vs. MT Cost					Base 1 Cost
				8	7	6	5	4	
A 324	Alpha Cargo Ship 275 243 162					0 16	500	405	
B 216	Beta Cargo Ship* 184 162 108					0 8	346	270	
C 144	Charlie Cargo Ship 122 108 72					0 4	230	180	

* The Beta Class Cargo Ship has the unique ability to transport as many as 14 Factories (FY) (page 58) or 8 GU. The B may not mix a cargo of GU and FY. Others carry 1 FY for each GU and may mix cargo.

Ship Identification

All ships appearing in a game must be identified by speed/maneuverability/size/hull number/TAs. Speed, size and nationality are visible to any range on the battle board.

6/Z.2ad|rd|td|*** (6-speed, basic maneuverability, Super Dreadnought, hull number 2, Asteroid Deflector, Radiation Deflector, Torpedo Deflector, Mark III Unguided Torpedo). The vertical slash | is used to separate TA designations.

6/D.21 2 GU (6-speed, basic maneuverability, Delta Cargo Ship, 2 GU cargo).

Seat of Government Ship (GOV)

The Seat of Government Ship (GOV) is where all the high and mighty poobahs of your empire reside. One ship is assigned at gamestart. The 8/GOV governs all stars. Loss of the ship results in Victory Condition One for your enemies (page 98).

The home star produces 20-MT/year with 0 GU defense (the home population is loyal without a GU) as long as the GOV is present. Production drops to 2-MT/year the Cycom after the GOV departs. The GOV must be accompanied by merchant ships capable of carrying 18 FY whenever it moves, which are deposited at the new home star. TA development is disallowed in the Cycom after a GOV departs the home star. The new home star must be an already explored and unoccupied Multiple Star before the GOV arrives. The new home star's 18-MT/year production begins the Cycom after the GOV's arrival.

Old home star: 2 FY, 2-MT/year output, 16-MT/Cycom building capacity, 1 GU.

New home star: 18 FY, 18-MT/year output, 4000-MT/Cycom building capacity, 0 GU.

The GOV may never delay more than 8 years in setting up at a new home star and may not shift to a new home star more than 4 times during the course of a game. The fifth move results in Victory Condition One (page 98).

The GOV is landed on the planet of value and may not be attacked until all defenses have been destroyed or put to flight. After that, the GOV is destroyed by 5 guns fired at it from range 10 or less. It is expected that the GOV will attempt escape before the conclusion of a losing battle. If the GOV escapes, it must return to the home star within 8 years or be lost.

Optional Rule. Soon after a game starts, a very dense and fast-moving dust cloud occludes each home star. Home stars are no longer visible to or findable by other players. Fleet activities and warp ripple reports are unaffected. Rule eliminates home star paranoia.

Warships

Family	Designation	Name	No. of Guns	Gun Range	Speed vs. MT Cost							Base 1 Cost	
					10	9	8	7	6	5	4		
Behemoths	M	Behemoth	32	40	5700		3040		1900	1615	1425	950	
	LV	Leviathan	31	40					1752	1489	1314	876	
	TI	Titan	30	40	Some high-end ships are not allowed for arbitrary reasons				1612	1370	1209	806	
	BO	Bruno	29	40					1480	1258	1110	740	
	MO	Monster	28	40					1356	1153	1017	678	
	GI	Giant	27	40					1240	1054	930	620	
Beasts	GG	Gorgon	26	40			1811	1415	1132	962	849	566	
	DO	Demon	25	40			1648	1288	1030	876	773	515	
	OG	Ogre	24	40			1494	1168	934	794	700	467	
	BR	Brute	23	40			1350	1055	844	717	633	422	
	BT	Beast	22	40			1216	950	760	646	570	380	
Flowers	DA	Daffodil					21	40	2046	1364	1091	853	682
	580	511 341											
	TU	Tulip	20	40	1830	1220	976	762	610	519	458	305	
	LI	Lily	19	40	1632	1088	870	680	544	462	408	272	
	ZN	Zinnia	18	40	1452	968	774	605	484	411	363	242	
	PZ	Pansy	17	40	1290	860	688	538	430	366	322	215	
Ships O' Line	P	Petunia	16	40	1146	764	611	477	382	325	287	191	
	BE	Begonia	15	40	1014	676	541	422	328	287	254	169	
	Z	Super Dreadnought	14	40	894	596	477	373	298	253	224	149	
	DN	Dragon	13	40	786	524	419	328	262	223	197	131	
	DR	Dreadnought	12	40	690	460	368	288	230	196	173	115	
Cruisers	BB	Battleship	11	40	600	400	320	250	200	170	150	100	
	CB	Battlecruiser	10	40	516	344	275	215	172	146	129	86	
	S	Star Cruiser	9	40	438	292	234	183	146	124	110	73	
	CA	Heavy Cruiser	8	40	366	244	195	152	122	104	91	61	
	CM	Medium Cruiser	7	40	300	200	160	125	100	85	75	50	
	CL	Light Cruiser	6	40	240	160	128	100	80	68	60	40	
Fleet Escorts	CS	Scout Cruiser	5	40	186	124	99	78	62	Some low-end ships are not allowed for arbitrary reasons.		31	
	DD	Destroyer	4	40	138	92	74	58	46			23	
	FR	Frigate	3	40	96	64	51	40	32				16
	GA	Galleon	5	20	102	68	54	42	34			17	
	CU	Cutter	4	20	66	44	35	27	22			11	
	SH	Schooner	3	20	40	26	20					6+	

The S is the largest warship that can built at gamestart. CB and larger are available after TAs 110-113 are developed. Speed 6 is tops at gamestart (TAs 96-99). Short-range guns on GA, CU and SH fire at double strength (3 guns = 6); no overload ability; defense is normal.

Guns/Defense

Guns are anti-matter weapons that generate exploding energy balls in the vicinity of an enemy ship. The energy balls are hurled into another dimension by the “gun” and regenerated near the target after a momentary delay. The anti-matter energy ball explodes instantly upon regeneration in the real universe. These guns use the same energy generators used by the ship’s shields.

Defense is provided by energy shields that are projected around a ship. These energy shields use the same energy generators as the ship’s guns. These shields protect a ship against most types of weapons, but even a weak attack has potential for causing damage.

How To Use. Each ship according to the warships chart on page 88 or with the TA rules for certain types of ships carries a stated number of guns for its type. A CB, for example, has 10 guns. These guns are actually a measure of a ship’s energy generation capacity, which means that a 10-gun ship, for example could fire 6 guns and have 4 for defense. The same ship could fire 2 guns and have 8 for defense. A ship in battle always allots all its energy to guns and defense.

There is no limit on the number of targets a ship can fire at other than the number of guns or targets available.

Gunfire may not travel through planets or moons. When a player is counting the squares from his ship to the enemy ship he must count along a straight line with no more than one 45° angle, or bend, in it. This may create blind spots behind planets, moons or asteroid torpedoes. A 90° bend or more or multiple bends are not allowed. Ships may fire through one another. That is, there is no such thing as obstruction by ships in the line of fire.

Gun Overload. A gun may be fired on overload so that it has the same power as 2 guns firing, but after the gun has been fired once on overload it is destroyed. Enemy fire destroys gun overload guns (again) on that turn before guns not placed on overload are destroyed. A ship may destroy its guns by overloading any time it pleases. The GA, CU and SH (page 88) have short-range guns that always fire on permanent overload with no harmful effect. Note that TA-117 Double-Gun Warships (page 131) also carry short guns that fire on permanent overload without harm. TA-180 Plasma Guns also have double power (page 142).

Against TA-190a, b, c Marks I, II, III Heliostatic Hellfire Machine (page 143) guns fired on overload count as 1 gun each. Thus, a CS that fires 5 guns on overload still counts as 5 guns. Same for a GA with short guns.

Added Defense for Speed. A bonus of one defense factor will be added to a target for every unit of speed greater than 6 that the target is travelling. Thus,

- A ship travelling at speed 10 has 4 added defense (cannot more than double assigned defense).
- A ship travelling at speed 9 has 3 added defense (cannot more than double assigned defense).
- A ship travelling at speed 8 has 2 added defense (cannot more than double assigned defense).
- A ship travelling at speed 7 has 1 added defense (if at least 1 defense was assigned).
- A ship traveling at speeds 6, 5 or 4 has no added defense.

Computing Range. Counting range along a diagonal consumes 2 range factors while horizontal/vertical range counting consumes 1 range factor, just as with warp and battle board ship movement.

Decimal Ratio	Integer Ratio	6-Sided Die = # of Hits					
		1	2	3	4	5	6
1 - 6.00	1 : 6	0	0	0	0	0	0
1 - 5.00	1 : 5	0	0	0	0	0	1
1 - 4.00	1 : 4	0	0	0	0	0	1
1 - 3.50	2 : 7	0	0	0	0	0	1
1 - 3.00	1 : 3	0	0	0	0	0	1
1 - 2.50	2 : 5	0	0	0	0	0	1
1 - 2.33	3 : 7	0	0	0	0	1	1
1 - 2.00	1 : 2	0	0	0	0	1	1
1 - 1.75	4 : 7	0	0	0	0	1	2
1 - 1.67	3 : 5	0	0	0	0	1	2
1 - 1.50	2 : 3	0	0	0	0	1	2
1 - 1.40	5 : 7	0	0	0	1	1	2
1 - 1.33	3 : 4	0	0	0	1	2	2
1 - 1.25	4 : 5	0	0	0	1	2	2
1 - 1.20	5 : 6	0	0	0	1	2	3
1 - 1.17	6 : 7	0	0	0	1	2	3
1 - 1.00	1 : 1	0	0	1	2	2	3
1.17 - 1	7 : 6	0	0	1	2	3	3
1.20 - 1	6 : 5	0	0	1	2	3	3
1.25 - 1	5 : 4	0	0	1	2	3	4
1.33 - 1	4 : 3	0	0	2	3	3	4
1.40 - 1	7 : 5	0	1	2	3	4	4
1.50 - 1	3 : 2	0	1	2	3	4	4
1.67 - 1	5 : 3	0	1	3	4	4	5
1.75 - 1	7 : 4	0	2	3	4	5	5
2.00 - 1	2 : 1	0	2	4	5	5	5
2.33 - 1	7 : 3	1	3	5	6	6	6
2.50 - 1	5 : 2	1	4	6	7	7	6
3.00 - 1	3 : 1	2	5	7	8	8	7
3.50 - 1	7 : 2	3	6	8	10	10	8
4.00 - 1	4 : 1	4	7	10	13	13	10
5.00 - 1	5 : 1	5	8	13	17	17	13
6.00 - 1	6 : 1	6	10	17	22	22	17
7.00 - 1	7 : 1	7	13	22	X	X	22
8.00 - 1	8 : 1	8	17	X	X	X	X
9.00 - 1	9 : 1	10	22	X	X	X	X
10.0 - 1	10 : 1	13	X	X	X	X	X
11.0 - 1	11 : 1	17	X	X	X	X	X
12.0 - 1	12 : 1	22	X	X	X	X	X
13.0 - 1	13 : 1	X	X	X	X	X	X

Hits Table

Number of hits scored on a target is determined by Hits Table, left. Gun attack factors are totaled per target to form a single ratio. Torpedo attack factors per target are totaled to form a separate ratio.

Damage Table

Die Damage

1	Gun
2	Hull
3	Engine*
4	Gun
5	Hull
6	Roll again:
1	= Gun
2	= Hull
3	= 2 Guns, 2 Hull
4	= All Engines*
5	= 1 TA destroyed – defender's choice**
6	= Bridge; ship goes straight ahead next turn at same speed

One **short gun** is lost for each **long gun** lost. Applies to TA-117 Double-Gun Warships.

One **torpedo tube** is lost for each gun lost. **Torpilleur** ships lose 2 tubes per gun.

A ship has the same number of **hull** factors as it has guns.

*Each **engine** loss reduces warp speed by that amount. It also reduces maneuverability. A ship with no engines cannot enter pre-warp.

Any add-on **TA can be destroyed. Excludes RR, ^{ss}, DR, HH, ^{AT}, QB, AB, ^P, etc.

Battle Record

Full Ship Designation + Notes															Battle Number:											
Round	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15											
Attack																										
Defense																										
Guns																										
Target																										
Torpedo																										
Target																										
Torpedoes Remaining																										
Next Move																										
Guns and Torpedo Tubes (X)																32	31	30	29	28	27	26	25	24	23	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				
Hull Hits	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				
																32	31	30	29	28	27	26	25	24	23	
Engines (X)	1	2	3	4	5	6	7	8	9	10																
TAs (X)																										

Ship Mortality

Destruction. A ship is destroyed when all guns/defense factors have been destroyed and the ship receives 1 more gun hit. A ship employing no defense will be destroyed by 1 gun firing at it (don't use the hits chart). A ship is helpless while landed on a planet for repairs, upgrading or any other reason. Cargo is always destroyed with a ship.

Surrender. Merchant vessels or other ships that have no offensive weaponry remaining will automatically surrender to any enemy warship carrying one or more guns and of equal or superior speed that succeeds in closing within gun range 10. This applies only if the defenseless ship is unprotected on the battle board by any friendly ship able and willing to attack the enemy.

Self-destruction. A player cannot destroy one of his own ships intentionally while it has crew on board. There are two methods to circumvent this rule:

1. Removing crew. If a player succeeds in moving one of his own ships within 1 movement factor of another of his ships for 1 full battle board turn, he will have succeeded in removing the crew if neither ship separates or employs any weapons/defense during that turn. The ships must travel at the same speed and on parallel courses. The ship removing the crew must have at least half the number of guns as the other or be half the cost or more. A single ship of any size can remove crews off any number of ships. Vacated ship then self-destructs.

2. If a ship lands on the planet of one of his own colonized stars, the crew can be assumed to have disappeared into the jungle on the next battle board turn and the ship blown up.

Hulking. A ship has the same number of hull factors as it has guns. When all the hull factors are shot away, the ship becomes a hulk with no guns, no defense, no engines, no TAs and no crew. An enemy ship always has the option of either hulking an opponent or destroying it whenever all the target's hull factors have been shot away.

The hulk is a neural-electronic slag heap of closely associated semi-sentient ship parts floating around in space that can be towed away, analyzed and repaired by any empire. The hulk drifts into a geosynchronous orbit 5 south of the planet of value the same year a battle is concluded. It will remain there until it is salvaged or destroyed.

A ship with destroyed engines also will assume a geosynchronous orbit of 5 south of the planet of value. The ship becomes a hulk after the current Cycom.

Repairing a hulk costs 30% of the original base cost of the ship. Cost of repair must be paid from the empire's IMLO Bank account. The hulk can be repaired only at a home star, at a production center star or by a TA-150 Repair Ship (page 139). Repairs include all TAs on the ship, but not the restocking of expendable ordnance. Repairs require the ship to land on the planet of value and remain in a helpless status for 1 full year.

Any TAs the hulk may have had are subject to examination by the new owner. Any TAs that the new owner does not have become available to that player the cycle of moves after the hulk is repaired. This includes TAs out of sequence to those already developed by the capturing player, but not earlier TA marks preceding the captured TA.

Repairing battle damage. Any ship suffering battle damage, but not hulked, may be repaired for 10% of the original base cost of the ship at any production center star, home star or by a TA-150 Repair Ship (page 139). Repairs include all TAs on the ship, but not the restocking of expendable ordnance. Repairs require the ship to land on the planet of value and remain in a helpless status for 1 full year.

Sequence of Events

Income

1. MT produced at each star
2. TA-10 IMLO loans granted, loaned MT taken
3. Income balances calculated
4. TA-2 Junking Center built
5. TA-2 Junking Center junking
6. Income balances adjusted to reflect TA-2 junkings

Expenditures

7. IMLO payments made
8. All construction takes place
9. Merchants loaded
10. Repairs begun

Warp Movement Events

11. Warp movement out
12. Warp movement in
13. Pirates attack
14. Intelligence reports given

Battle Board Events

15. Ships situated on appropriate battle board
16. Ships move, colonization GU dropped, ship-to-ship cargo transfers
17. Collisions determined, victims vaporized
18. TA-340 series of Asteroid Torpedoes fired and emplaced
19. Nearly all other weapons fire and explode
20.
 - a. Gun hits determined
 - b. Torpedo and Hellfire Machine hits determined
 - c. Gun damage scored
 - d. All other damage scored
21. Players record next move for all ships on battle board
22. Hellfire placed (TA-190 Heliostatic Hellfire Machine, pages 141 and 142)
23. Repeat 16 through 22 until battle concluded

Goodie Units

24. GU landed or off-loaded

Victory Conditions

25. Victory conditions checked if at end of current cycle of moves

Chapter 7



Victory Conditions



Victory Conditions

Condition Zero. Last empire surviving on the map is declared the Grand Sweepstakes winner. First empire to eliminate another empire is guaranteed second place in the game regardless of ultimate fate of that empire.

Condition One. Loss of an empire's lone Government Ship (GOV) throws the empire into anarchy. All stars go neutral; all ships fall under the control of the conquering empire the following cycle of moves.

Condition Two. Attempting to relocate a home star for the fifth time. All empire assets vanish from the playing map.

Condition Three. Loss of all stars except the home star. All remaining ships gather into a single fleet and flee off the edge of the map to an unexplored part of the galaxy. Upon arrival you will be required to start another game.

Condition Four. Loss of your home star's 1 GU, which can only be destroyed after all defenders at that star have been destroyed or run off.

Condition Five. A king gets bored. All ships are taken over by IMLO. All stars go neutral. You are not allowed to play another game until brain and personality transplants become routine medical procedures.

Condition Six. An empire develops every TA in the rule book. The king claims a moral victory and establishes claim to the entire galaxy. All other empires send the victor 100 MT in protection money at the start of the next cycle of moves and then proceed to insult and ignore the enemy king. The fighting continues unabated.

Chapter 8



Introduction to Technological Advancements



Technological Advancement

The concept of a technological advancement (TA) allows a player to purchase weaponry and economic development capabilities not included as a basic part of the game. The TAs are purchased for a set cost. Development time is simulated by two requirements:

1. A TA is not available until the cycle of moves (Cycom) after it is purchased.
2. Number of TAs developed per Cycom is regulated by TA-33 Research University (page 115). Also see TA-90 Cultural Diversity (page 121).

The cost of purchasing a TA must be paid at an empire's home star. The weapon or capability purchased may be built at any production center star. A TA cannot be purchased if the Seat of Government ship (GOV) is in transit to another star (page 87).

TAs must be purchased in order, in that a Mark II weapon, for example, cannot be purchased before the Mark I has been purchased. An exception is noted with TA-90 Cultural Diversity, under the technology entry (page 121), which in some iterations allow multiple marks of a single TA to be developed in 1 Cycom.

If a ship carrying a TA is captured by the enemy, the enemy may begin production of that TA the Cycom after the captured ship is taken to the home star. The captured TA is available to the new owner whether or not earlier marks of that TA have been developed.

TA visibility. TAs on a ship are not visible to the enemy, except as they become apparent during battle. The mark of a TA is revealed the same way.

Max. # of TAs on a Ship

No ship may carry more than 10 TAs. TAs that pertain to hull type (Solar System Defense, Double-Gun Warships, Raiders, Armored Warships, etc.) don't count as a TA. TA enhancements (Torpileur Capability, Torpedo Gatling, etc.) do count as a TA.

Upgrading TAs

Upgrading TAs is free, except that the cost *difference*, if any, between the old mark of TA and the new mark must be paid from an empire's IMLO Bank account. If a *ship* is upgraded (page 112) the cost difference between the old weapon's suite and the new must be paid.

The old TA, such as a deflector or torpedo installation, is destroyed by upgrading and its value is lost unless another ship is on the scene during the upgrade process that may accept the removed TA, but only if the ship is allowed to carry that type of TA. Removed TAs can't be stored.

A ship must warp into and out of a friendly production-center star, after which all TAs are considered upgraded to the latest mark, unless remaining with an earlier mark is desired. No stopping time is required.

Rules with each TA may specify exceptions to the above rules.

TA Development Cost

Cost	Frequency
100 MT+	Only 1 TA per Cycom allowed*
90 MT	
80 MT	
70 MT	
60 MT	
50 MT	
40 MT	
30 MT	Up to 2 TAs per Cycom allowed
20 MT	
16 MT	
12 MT	
10 MT	
8 MT	
4 MT	

* See TA-33 Research University on page 115 for exceptions.

Chapter 9



Group I

Extended Capabilities
&

Basic TAs



Group I – Extended Capabilities & Basic TAs

- TA-1 Ship Maintenance Capability – 0 MT/not a TA
- TA-2 Junking Center – JC – 4 MT
- TA-3 Usammy the Diplomatic Envoy – ude – 4 MT
- TA-4 Dead Dwarf Production Center – dd – 100 MT
- TA-5 Dead Dwarf Telescope – – 8 MT
- TA-6 Dead Dwarf Fortress – DDF16 – 20 MT
- TA-7
- TA-8
- TA-9
- TA-10 Intergalactic Mafia Loansharking Organization – IMLO – 12 MT
- TA-11 Intergalactic Mafia Espionage Racketeers – IMER – 8 MT
- TA-12 Intergalactic Mafia Rental Cartel – IMReC – 4 MT/not a TA
- TA-13 Navigational Beacons – NB – 8 MT
- TA-14
- TA-15
- TA-16 Questor Probe – QP – 20 MT
- TA-17
- TA-18
- TA-19
- TA-20 Mark I Mass Production Capability – MPC.I – 100 MT
- TA-21 Mark II Mass Production Capability – MPC.II – 50 MT
- TA-22 Mark I Upgrading Ships – n/a – 50 MT
- TA-23 Mark II Upgrading Ships – n/a – 20 MT
- TA-24
- TA-25
- TA-26
- TA-27
- TA-28
- TA-29
- TA-30 Omnificent War Leader – OWL – 16 MT
- TA-31 Admiral Siegfried K. Krumbleplotz – ♂ – 16 MT
- TA-32 Admiral Countess Lorali Waddington-Bluesnout III – ♀ – 16 MT
- TA-33 Research University – RU – 100 MT
- TA-34 Governmental Efficiency – n/a – 100 MT
- TA-35
- TA-36
- TA-37
- TA-38
- TA-39

TA-40 Mark I Weapons Sniffer – ws – 100 MT
TA-41 Mark II Weapons Sniffer – ws2 – 50 MT
TA-42 Mark III Weapons Sniffer – ws3 – 100 MT plus 200 MT to IMER
TA-43 Weapons Cloaking Device – (ws) – 100 MT
TA-44 Mark I Range Finder
TA-45 Mark II Range Finder
TA-46 Mark III Range Finder
TA-47 Mark I Range Loser
TA-48 Mark II Range Loser
TA-49 Mark III Range Loser
TA-50 Goodie Unit Cargo Shuttle – gus – 8 MT
TA-51
TA-52
TA-53
TA-54
TA-55 Marks e, ee and eee Battle Stars (Elite Crew) – e, ee or eee – 80 MT
TA-56
TA-57
TA-58
TA-59
TA-60 Mark I Fleet Formation Keeper – f – 40 MT
TA-61 Mark II Fleet Formation Keeper – ff – 20 MT
TA-62 Mark III Fleet Formation Keeper – fff – 60 MT
TA-63
TA-64
TA-65
TA-66
TA-67
TA-68
TA-69

TA-70 Mark I Tractor Beam – t – 60 MT
TA-71 Mark II Tractor Beam – tt – 40 MT
TA-72
TA-73
TA-74
TA-75
TA-76
TA-77
TA-78
TA-79
TA-80 Enhanced Maneuverability Capability – // – 20 MT
TA-81
TA-82
TA-83
TA-84
TA-85
TA-86
TA-87
TA-88
TA-89
TA-90 Cultural Diversity – n/a – None
TA-91
TA-92
TA-93
TA-94
TA-95
TA-96 Warp Speed 7 – 7 – 20 MT
TA-97 Warp Speed 8 – 8 – 20 MT
TA-98 Warp Speed 9 – 9 – 20 MT
TA-99 Warp Speed 10 – 10 – 20 MT

TA-1 Ship Maintenance Capability

Descriptive: The ability to maintain a ship is basic to the operation of any deep space navy, which the Ship Maintenance Capability makes possible.

Designation: None

Prerequisite: None

Development Cost: None. Does not count as a TA; basic capability at gamestart.

Item Cost: n/a (Maintenance is a liability, not a capability)

When inoperable: Never

Narrative: The Ship Maintenance Capability allows a stellar empire to maintain its ships. The empire must pay 1 MT for each 3-gun and larger warship in its fleet at end of the last Cycom (calendar, page 57). **Example:** If an empire has 13 3-gun and larger warships, it must pay 13 MT each Cycom to continue using those ships. If full payment is not made, no ships can make a warp move until the full balance due is paid to TA-10 Intergalactic Mafia Loansharking Organization (page 108).

The Expenses chart on Page 62 has a reminder entry for ship maintenance.

TA-2 Junking Center Capability

Descriptive: The Junking Center is a salvage yard/recycling capability that is used to extract systems and materials from obsolete or damaged ships for a solid return on original investment.

Designation: JCC

Prerequisite: None

Development Cost: 4 MT

Item Cost: n/a (JCC is a capability, not a facility)

When inoperable: Never

Narrative: The JCC technology allows a stellar empire to take anything that cost MT and convert it to MT for a 75% return on the item's cost to the nearest whole MT. The JCC capability exists at the home star and every production center star in a stellar empire. The JCC is a capability and not a facility, so it cannot be destroyed. The JCC is captured and becomes an enemy capability if any production center star is conquered.

TA-3 Usammy the Diplomatic Envoy

Descriptive: Usammy the Diplomatic Envoy, named after a famous terrorist of ancient times, is an unsavory character who conducts empire-to-empire technology purchases or exchanges. A man of discriminating taste, he has chosen the Mark II Hyggyns Mining Ship as his transportation of choice.

Designation: ude as in 10/HMS.81ude, etc.

Development Cost: 4 MT

Prerequisite: TA-102 Mark II Hyggyns Mining Ship (page 127)

Item Cost: 16 MT

When inoperable: Not allowed

Narrative: Usammy the Diplomatic Envoy purchases technology information from other empires.

The ude must board his transportation, a Mark II Hyggyns Mining Ship, at the home star. He must then travel to a deep space location anywhere on the map, but preferably a site of convenience to other empires. Other players may not establish alternate sites. The ude then announces his location to all other players and invites them to send a similar envoy to his location. Once 2 or more ude's are present in the same star chart square, negotiations may begin.

The ude has diplomatic immunity, which is enforced by TA-10 IMLO, and may not be destroyed.

Each player's ude is empowered to purchase TA information with other empires. A player may agree to purchase a maximum of 1 TA per Cycom, but the price must be 100% or more plus IMLO will receive 20% of the agreed price.

Example 1: If player 1 purchases a TA worth 100 MT from player 2, player 1 must pay player 2 100 MT plus he must pay IMLO 20% (20 MT) of the agreed price.

Example 2: Player 1 sells a TA valued at 100 MT for the usurious price of 200 MT to player 2. Player 2 must pay player 1 200 MT plus another 20% (40 MT) to IMLO.

TA-4 Dead Dwarf Production Center

Descriptive: The Dwarf Star Production Center allows an empire to establish a production center on the pleasantly warm surface of a Dead Dwarf Star (page 50), which is otherwise worthless.

Designation: dd

Development Cost: 100 MT

Prerequisite: TA-5 Dead Dwarf Telescope

Item Cost: No extra cost beyond that of the 1 GU (page 57) and 2 FY (page 58) needed to create a Dead Dwarf production center. GU and FY can be installed simultaneously.

When inoperable: Never

Narrative: Select star names for production center stars from list, most of which are derived from amphibian genera.

TA-5 Dead Dwarf Telescope

Descriptive: The Dead Dwarf Telescope allows an empire to detect the location of Dead Dwarf stars wandering about the galaxy.

Designation: None

Development Cost: 8 MT

Prerequisite: None.

Item Cost: 0 MT.

When inoperable: Never. It cannot be destroyed.

Narrative: Allows an empire to locate and visit Dead Dwarf stars. Dead Dwarfs are placed on the map for all to see, but cannot be visited until this TA has been developed. There is no Dead Dwarf Telescope facility, just the capability.

Aridis

Alytes	Annea
Amphiuma	Astratus
Agalychinus	Anteus
Alvarius	Aevis
Acris	Atobius
Aneides	Atra
Astellia	Aviceps
Anondrata	Arborea
Anomosella	Arleata
Annulatum	Akatina
Arthroleptella	Dendro
Arthroleptis	Diaglena
Astylosternus	Dorsata
Astylomnesii	Ensatina
Arabegora	Ocularis
Adenella	Oedopina
Ala Eo	Opalina
Anta Ubi	Orneata
Aro Ata	Proteus
Atra Mandra	Rugiceps
Aposterus	Sirea
Achinata	Spinosa
Aradoxa	Venulosa
Adatyla	Vivipara

TA-6 Dead Dwarf Fortress

Descriptive: The Dwarf Dwarf Fortress is very similar to TAs 192-195 Moon Fortress, except that this TA allows the weapon to be emplaced at a Dead Dwarf Star (page 50).

Designation: DDF8 as in DDF8.NE, DDF16.SE, DDF24.SW or DDF32.NW (the 8, 16, 24 or 32 are number of guns and the NE, SE, SW and NW indicate emplacement direction.

Development Cost: 20 MT

Prerequisite: TA-192 Mark I Moon Fortress (page 145) for DDF8, TA-193 Mark II for DDF16, TA-194 Mark III for DDF24 and TA-195 Mark IV Moon Fortress for DDF32.

Item Cost: DDF8 costs 36 MT, DDF16 80 MT, DDF24 130 MT and DDF32 200 MT.

When inoperable: When destroyed by gunfire (page 90).

Narrative: The sole permitted use of the Dead Dwarf Fortress is for the defense of a Dead Dwarf Star that has become a production center. Up to 4 are installed in order 1 square from the Dead Dwarf Star to the NE, SW, SE and NW. Note that this creates a gun-fire blind spot through the planet of only 90° for each DDF. Otherwise, the DDF is the same as TAs 192-195 Moon Fortress (pages 145-146) in that it can be attacked only by guns and must be destroyed before the star's 1 GU can be destroyed. For TAs, it may carry only TA 44, 45 or 46 Range Finder. Item cost to mount the rf is 4, 12, 30 or 60 MT, respectively.

TA-10 Intergalactic Mafia Loansharking Organization

Descriptive: The criminal underground has its dirty fingers into everything, especially in the life of galactic citizens in every empire in the universe. Intergalactic thuggery is involved in banking (IMLO Bank, page 57 under Megatons (MT)), loansharking (TA-10), espionage (TA-11) and ship rental (TA-12). The association of criminal cartels has not entered the drug trade (TA-101 Hyggyns Mining Ship).

Organized criminal behavior and a ritualized bribery system are largely responsible for the governmental waste and corruption that will plague your empire throughout the game (see TA-34 Governmental Efficiency on page 115). Refusing membership is not an option.

IMLO also is a strong-arm collection agency and is the “enforcer” of the galaxy used by players to collect bad debts, resolve player accounting errors in an instant and through intimidation cause players to remain in 100% compliance with the rules at all times.

Designation: IMLO

Prerequisite: None

Development Cost: 12 MT (Mandatory membership during first Katun)

Item Cost: n/a

When inoperable: Never. Ships of the IMLO enforcement fleet are equipped to self-destruct and will be replaced as needed.

Narrative: IMLO Bank loans MT to the downtrodden at exorbitant interest rates.

Borrowing. A player lists the MT amount borrowed as income at the beginning of a Cycom. The loan must be taken through IMLO Bank and may not exceed 10 times the player's yearly income at the time the loan is taken nor may it be less than 100 MT.

Repayment. Repayment *must* be made in MT the first year of each Cycom. The first payment is due the first Cycom after the loan is taken. Each payment *must* be equal to 20% of the original balance. There will be 6 payments (1 each Cycom), although the loan may be paid off ahead of time if a lump sum payment is made for the remaining balance.

Consolidation. Any previous balance still due on a loan when a subsequent loan is taken must be consolidated into the new loan. Thus, there will always be only 1 loan payment to make. Consolidation is possible only if 2 or more payments already have been made.

Refinancing. A loan can be refinanced so as to lower the weekly payments. This can be done only if payments have already been made for 2 or more Cycoms.

Enforcement. IMLO has a large quantity of warships equipped with a range of TA weaponry. These ships are used to “collect” past due payments and to “correct” rules infractions. Players utilize these ships as needed.

TA-11 Intergalactic Mafia Espionage Racketeers

Descriptive: IMER is an intelligence-gathering organization that has no respect for humanity. There is no secret it does not know and all are for sale.

Designation: IMER

Prerequisite: TA-10 Intergalactic Mafia Loansharking Organization (IMLO)

Development Cost: 8 MT

Item Cost: n/a

When inoperable: Never.

Narrative: IMER will agree to sell one secret per cycom per empire. Information is requested along with the reporting of warp ripples. Information is provided by your victim along with his warp ripple report. Information is exchanged directly between players.

400 MT – Location of one GOV ship for (specify empire) at end of current Cycom

300 MT – Location of one Plague Planet (specify opponent)

200 MT – Locations of all Amphibian Empires

150 MT – Locations of fleets in deep space at end of Cycom (specify opponent)

125 MT – List of all ships (speed and size only) in navy of (specify opponent)

100 MT – Locations of all Pirate Empires

90 MT – Stolen scientific secrets allow you to develop 2 TAs next Cycom

80 MT – Locations of all Xenophobiacs

70 MT – List of all 1-MT stars colonized by (specify opponent)

60 MT – List of TAs developed by (specify opponent)

50 MT – List of all TAs mounted on largest ship in space navy of (specify opponent)

40 MT – Largest ship (speed and size only) in space navy of (specify opponent)

TA-12 Intergalactic Mafia Rental Cartel

Descriptive: IMReC is a warship leasing organization.

Designation: IMReC (its ship is sometimes called the “Wandering Asshole”)

Development Cost: 4 MT.

Prerequisite: TA-10 Intergalactic Mafia Loansharking Organization (IMLO)

Item Cost: Rental unit leased for 16 MT per Cycom.

When inoperable: During first Katun.

Narrative: IMReC leases just 1 type of ship: z10/CS.00ad|rd|hd|md|td³|ti³|***** (Mark XXVI Ambush Drive; Asteroid, Radiation, Heat, Magnetism and Torpedo Deflectors, Torpedo Interceptor, and Mark V Unguided Torpedos). Cost is 16 MT per Cycom, which is paid at the moment of rental and on year 1 of each succeeding Cycom. The ship starts from either the leasor's home star or from any of his production center stars immediately upon lease. It travels anywhere the leasor sends it. If the ship is lost, a payment of 200 MT to IMReC is required at the start of the next Cycom. Only 1 at a time may be rented to an empire. Two leased ships will not fight each other. IMReC does not pay warp juice cost. Reloads of expended torpedoes are done at no cost at any production center star (no time required). Repairs are performed normally. An empire may terminate a lease at any time; the leased ship returns instantly to IMReC.

TA-13 Navigational Beacons

Descriptive: A Navigational Beacon is a warp drive amplifier and navigational aid. Navigational Beacons allow fleets to double the speed of their warp movements. NBs are owned and operated by IMLO, but purchased and installed by individual empires.

Designation: NB as in NB-Y17N, NB-Y11N, NB-Y5N, etc. (map coordinates included with NB designation).

Prerequisite: TA-10 Intergalactic Mafia Loansharking Organization

Development Cost: 30 MT

Item Cost: 8 MT each (purchased from IMLO)

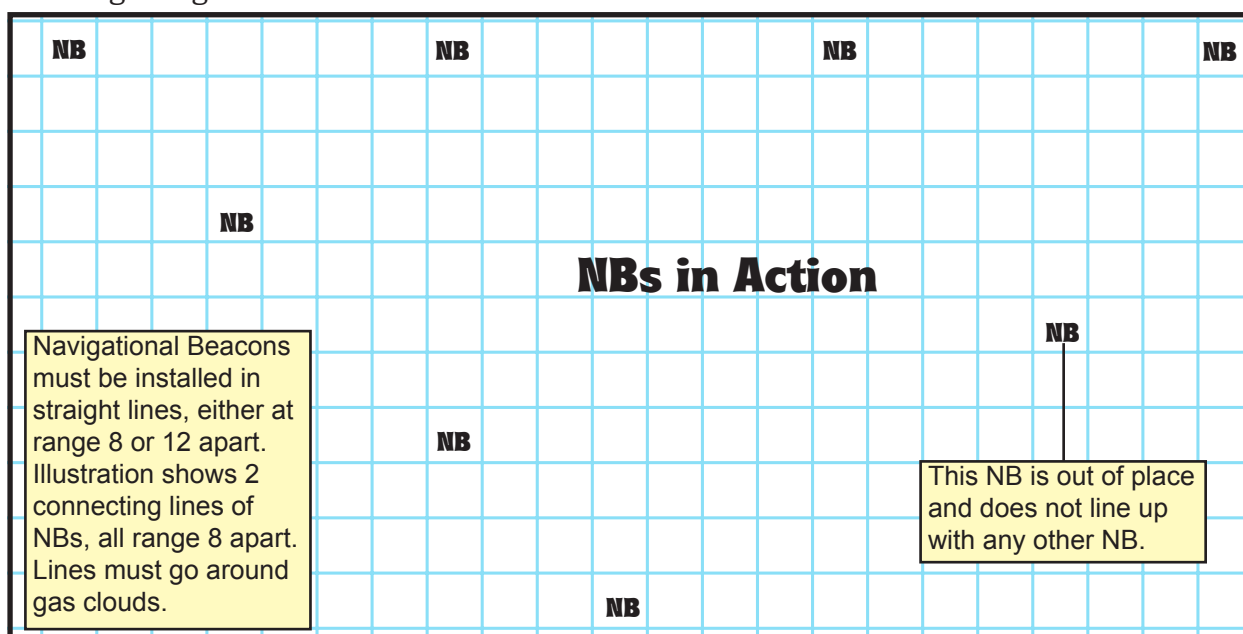
When inoperable: Never.

Narrative: Fleets must warp from one NB to the next. All ships warping from one NB to another will increase their speed to a maximum of double their normal speed, but never exceeding speed 12. When using NBs a ship must always begin or end each year's move at an NB. A fleet need not begin at the end of a string of NBs.

Navigational Beacons are placed in straight lines across a map and always in deep space squares (may not be installed at a star or leap across a gas cloud). The lines may be either vertical/horizontal or on a diagonal. Straight lines may connect to other straight lines, but the connecting beacons must line up. NBs must be installed at range 8, 10 or 12 apart on the star chart. A line of NBs that are range 8 apart will allow a 4-speed ship to warp along at speed 8. A line of NBs that are range 12 apart will allow a 6-speed ship to warp at speed 12. Other speeds of ships may also warp at speeds 8, 10 or 12, but may not exceed double their legend warp speed.

Each NB requires the cargo carrying space equivalent to 1 GU or FY.

Navigational Beacons belong to IMLO. They may not be destroyed, moved or deactivated once installed. Installation of an NB creates a unique warp ripple that must be reported as an NB installation to all other players. All players may use NBs installed by any other player. Ships warping along a line of NBs do *not* make warp ripple reports. Enemy fleets traveling along a line of NBs will *not* make contact.



TA-16 Questor Probe

Descriptive: An unmanned spy robot with warp drive camouflaged as a small asteroid.

Designation: QP

Prerequisite: None

Development Cost: 20 MT

Item Cost: 2 MT. Carried by merchant ships, 8 per GU carrying capacity.

When inoperable: At the end of the Cycom.

Narrative: The Questor Probe is carried by any merchant ship (as many as 8 per GU carrying capacity). A merchant ship approaches to range 1 of the target star to launch the QP. The QP takes 1 full year to enter the target star, which can be any type of star except a multiple star (binary through sextuple). The QP consumes warp juice just as would a ship and makes a warp ripple report as a QP upon arrival and each year thereafter until it dies.

The QP survives at the target star until the end of the Cycom in which it arrives. The parent ship can depart immediately after dropping off the QP.

The QP reports enemy forces present to its owner just as if a ship was at the star. It also warns of a Plague Planet (you don't catch the disease if you stay away).

TA-20 Mark I Mass Production Capability

Descriptive: Mass production is a means to cut the cost of ships if more than one is made to a particular design.

Designation: MPC-I

Prerequisite: None

Development Cost: 100 MT

Item Cost: n/a

When inoperable: Never

Narrative: MPC-I allows a player to cut the cost of ships he builds if several are built having the same speed, the same number of guns and the same size name. The first ship costs 100%, but the second ship costs 90% and the third and subsequent ships only 70%.

The cost reduction applies only to the basic ship and not to any TAs added on. Cost reduction applies retroactively in that ships built prior to the development of this TA allow ships built after this TA to get the cost reduction benefit. TA equipment need not be the same on all ships, except that the same types of torpedoes must be carried by all (marks may vary). All ships need not be built at the same time, or even during the same Katun.

This TA is used *only* for ships. It does *not* apply to materiel such as GU, FY, Hellfire Machines or Moon Fortresses, etc.

TA-21 Mark II Mass Production Capability

Descriptive: Enhanced mass production is a means to cut the cost of ships even more if more than one is made to a particular design.

Designation: MPC-II

Prerequisite: TA-20 Mark I Mass Production Capability

Development Cost: 50 MT

Item Cost: n/a

When inoperable: Never

Narrative: Same as MPC-I except that second and subsequent ships cost only 70%.

TA-22 Mark I Upgrading Ships

Descriptive: The ability to upgrade ships helps eliminate the need for new construction to meet changing needs.

Designation: n/a (upgraded ship carries new designation)

Prerequisite: None

Development Cost: 50 MT

Item Cost: Pay difference between old ship and reconfigured ship plus 10% but at least 2 MT. Round to nearest MT. TAs already mounted on the old ship not counted as part of old ship's cost. But if the old ship mounts a TA that will cost more when the ship is upgraded, such as any torpedo, additional cost must be paid in full (Upgrading TAs, page 100).

When inoperable: A ship may be upgraded only once per Cycom

Narrative: A small warship cannot be increased in size beyond a 9-gunner nor may a 10-gunner or larger be increased in size beyond a 32-gunner. A merchant ship cannot be upgraded beyond an A Class cargo ship. Speed cannot be increased to more than that allowed for that particular type of ship. No "new" ship can be created nor can a ship be reduced in size or subdivided into smaller ships. Two ships cannot be combined. TA installation restrictions must be respected, which may result in loss of a TA on the upgraded ship.

Damaged or hulked ships can be upgraded to fully functioning larger ships, thus bypassing the normal 10% or 30% cost of repairing a damaged ship or hulk.

Upgrading must be done at a production-center star and takes one full year. Ships during upgrade process may be destroyed by friendly or enemy ships firing 5 or more guns from range 10 or less at the victim, which is on the planet of value. Upgrading example:

Year 1 – Ship arrives at upgrading location and lands on planet of value

Year 2 – Ship is helpless while it undergoes upgrading

Year 3 – Reconfigured ship free to depart

TA-23 Mark II Upgrading Ships

Descriptive: Enhanced ability to upgrade ships.

Designation: n/a (upgraded ship carries new designation)

Prerequisite: TA-22 Mark I Upgrading Ships

Development Cost: 20 MT

Item Cost: Pay difference between old ship and reconfigured ship – no extra surcharge.

When inoperable: n/a

Narrative: No size limits on upgrading a ship. No "new" ship can be created. Two smaller ships of same speed can be combined to create 1 larger ship of the same speed, but the cost of the two small ships must be similar to the new ship. The cost difference must be no more than one step above or one step below, as illustrated in the examples below.

Examples:

8/CS.22 and 8/CS.23 (total cost of 198 MT) are combined to create 8/CA.45 (cost of 195 MT). The 3 MT cost reduction is returned to the empire's treasury.

6/Z.1 and 6/Z.2 (total cost of 596 MT) are combined to create 6/TU (cost of 610 MT); player must pay the 14 MT difference.

TA installation restrictions must be respected, which may result in loss of a TA on the upgraded ship.

TA-30 Omnificent War Leader (OWL)

Descriptive: There comes a time when an inspirational war leader of dubious talent seizes control of the political processes of your empire and succeeds in temporarily halting or reversing the inevitable slide toward extinction. The Omnificent War Leader (OWL) is given to lengthy patriotic speeches, obsessive micromanagement and kissing untidy babies.

Designation: ☿ as in 8/GOV.☿|ad|rd (option-1 in Zeal font on Macintosh)

Prerequisite: An empire must have engaged in hostile action with another empire in which weapons were used.

Development Cost: 64 MT. The head of your government (Owl) always resides on the GOV (page 87). Effective the Cycom after development.

Item Cost: None

When inoperable: Never.

Narrative: Every victory scored by your empire is followed by the OWL (☿) giving an inspirational war speech that results in a one-time surge of productivity. Defeats are subtracted from victories per Cycom to determine the payoff.

Rewards are paid at the start of the Cycom following the victory.

Reward	Victory
200 MT (per GOV)	Destroy any empire's GOV (page 87)
300 MT (per GOV☿)	Destroy any empire's GOV (page 87) with a TA-30 OWL on board
100 MT	Capture enemy production center star
8 MT (per star)	Kill 1 GU on enemy 1-MT/year star
30 MT	Kill TA-31 Siegfried K. Krumbleplotz
30 MT	Kill TA-32 Admiral Countess Lorali Waddington-Bluesnout
20 MT (per ship)	Destroy or capture 9-gunner & smaller, merchants
50 MT (per ship)	Destroy or capture 10-21 gunner
80 MT (per ship)	Destroy or capture 22-32 gunner
20/30/40 MT	Kill 1 TA-100/100.2/100.4 Warp Juice Mining Module
30/40 MT	Kill 1 TA-101/102 Hyggyns Mining Ship
100 MT	Kill 1 TA-102 Extreme Deification and Exploitation of Nirvana
50/60/70 MT	Kill 1 TA-103/104/105 Planet Butcher
30/40/50 MT	Kill 1 TA-106 5/7/9-gun Raider
50 MT	Kill 1 TA-107/108 Bluu/Radd Mining Ship
30 MT	Kill 1 TA-120 Q Ship
30/40 MT	Kill 1 TA-140/141 Light/Heavy Scout Carrier
50 MT	Kill 1 TA-146/147 Archaeology Retrieval Craft – White/Red
10 MT	Kill 1 TA-190 Heliostatic Hellfire Machine
20 MT	Kill 1 TA-192 Mark I Moon Fortress
40 MT	Kill 1 TA-193 Mark II Moon Fortress
60 MT	Kill 1 TA-194 Mark III Moon Fortress
80 MT	Kill 1 TA-195 Mark IV Moon Fortress
20 MT	Kill 1 TA-750 Asteroid Miner

TA-31 Admiral Siegfried K. Krumbleplotz

Descriptive: Admiral Krumbleplotz, who is known as the “Maniac of the Dead Dwarf Reach,” is the one in a thousand ship captain of such inspirational character and skill that the crew of his ship achieves a competence and effectiveness well beyond that of an average ship’s complement. Yea, the very decks tremble to his step; the guns of his ship perform in violation of the laws of physics!

Designation: ♂ (symbol is option-4 in Zeal font on Macintosh) as in 8/S.3ad|rd|td/♂

Prerequisite: None

Development Cost: 16 MT

Item Cost: None

Installation Cost: None. Initial embarkment must always be on a newly built or newly upgraded ship and must be on a ship of any size having a warp speed of 7 or more. Available at any production center star after development. Effective the Cycom after installation.

When inoperable: When ship is hulked. Krumbleplotz is killed if his ship is destroyed. Not capturable. Penalty for loss is 40 MT payable at any production-center star the first year of the next Cycom.

Narrative: The guns of Admiral Krumbleplotz’s ship are able to fire on overload with no damage to the guns. Guns are not burned out through use of overload even if desired. The ship has the option of firing guns normally.

A further ability of a ship with Admiral Krumbleplotz embarked is that the ship may self-destruct if it has been hulked *and* in danger of enemy capture.

Admiral Krumbleplotz may be transferred from one ship to another with no time delay. The admiral’s effectiveness is transferred instantly to the new ship and the old ship loses the enhanced capability. The ship receiving Krumbleplotz need not be a new ship.

TA-32 Admiral Countess Lorali Waddington-Bluesnout

Descriptive: Admiral Countess Lorali Waddington-Bluesnout, who is known as the “Madwoman of the Indigo Cluster,” is the same as TA-31 Admiral Krumbleplotz, except for gender and designation.

Designation: ♀ (symbol is option-2 in Zeal font on Macintosh) as in 9/CA.4ad|td|♀

Prerequisite: TA-31 Admiral Siegfried K. Krumbleplotz. Cannot be built until after Krumbleplotz is lost.

Development Cost: 16 MT

Item Cost: None

Installation Cost: Same as TA-31

When inoperable: Same as TA-31

Narrative: Same as TA-31

TA-33 Research University

Descriptive: A Research University allows an empire to develop new technologies.

Designation: RU as in RU.1, RU.2, RU.3 and RU.4

Prerequisite: None.

Development Cost: 100 MT, which allows development of 2 new RUs.

Item Cost: 100 MT. A player has 2 RU at gamestart, which are at the home star. Any new RU must be located at 1 other production center star. They cannot be split up.

When inoperable: An RU is destroyed if the star at which it is located is neutralized or captured. A player may replace destroyed RUs, but the total number an empire has operational may never exceed 4. Spares beyond 4 may be built, but must be held in reserve. Example: RU.1 and RU.2 always at home star. RU.3 and RU.4 at production center star. RU.5 and RU.6 built as reserves must be at a third production center star.

Narrative: An RU allows an empire to develop up to 50 MT of TAs per Cycom, but never more than 2 TAs per Cycom. The 2 RUs assigned at gamestart to a player's home star allow that empire to develop as much as 100 MT of TAs per Cycom, but never more than 2 TAs per Cycom. A player with 3 RUs can develop up to 150 MT of TAs per Cycom and 4 RUs allows up to 200 MT of TAs per Cycom. But always never more than 2 TAs per Cycom may be developed, unless freebies from an Amphibian Empire pad the number.

TA-34 Governmental Efficiency

Descriptive: Homo Superior is an improved Homo Sapiens. They are smarter, larger, more handsome, ovoviviparous, have prehensile toes and tail, and have much improved internal organs of greater capacity. The females are male-fantasy spectacular. The fecund lot of them are immortal, although boredom eventually returns mortality to them all. Another failing is governmental inefficiency, for which Homo Superior has developed a pricey palliative called efficiency.

Designation: None

Prerequisite: None.

Development Cost: 100 MT. Must be developed each Katun to prevent inefficiency setting in on the following Katun (Calendar, page 57). This TA is optional, although highly advisable because if you don't use it your empire eventually will die.

Item Cost: None

When inoperable: Never.

Narrative: Criminal organizations, corrupt politicians and human failings cause governmental organizations to lose efficiency as they age. The Governmental Efficiency TA is used to prevent an empire's MT production from being reduced by 10% during the second Katun and a general collapse of order and dissolution of empire in the third Katun. Efficiency is restored the Cycom following development of this TA.

A player has the option of operating his empire at a 10% loss or of allowing his empire to collapse. An empire collapse results in all that player's ships vanishing from the playing map and all that empire's stars going neutral with no factories (FY, page 58). His hazards remain, but are revealed to all players.

It is advised that players remind each other periodically during the course of the game that this TA should be developed each Katun.

TA-40 Mark I Weapons Sniffer

Descriptive: Sniffs out the TA carried by an enemy ship.

Designation: ws as in 8/CA.22ad|rd|td|***|ws

Prerequisite: None

Development Cost: 100 MT

Item Cost: 10% of base cost of warship. Can be on any warship of 5 or more guns.

When inoperable: When ship is hulked or destroyed. Repaired when hulked ship is repaired.

Narrative: The Weapons Sniffer smells out which TAs are mounted on an enemy ship to any range on the battle board. The ws *does not* determine mark of the TA. The ws only sniffs those TAs the owner has developed.

TA-41 Mark II Weapons Sniffer

Descriptive: Sniffs out the TAs carried by an enemy ship.

Designation: ws2 as in 8/CA.22ad|rd|td|***|ws2

Prerequisite: TA-40 Mark I Weapons Sniffer

Development Cost: 50 MT

Item Cost: 10% of base cost of warship. Can be on any warship of 5 or more guns.

When inoperable: When ship is hulked or destroyed. Repaired when hulked ship is repaired.

Narrative: The Weapons Sniffer smells out which TAs are mounted on an enemy ship to any range on the battle board. The ws *does* determine mark of the TA. The ws only sniffs those TAs the owner has developed.

TA-42 Mark III Weapons Sniffer

Descriptive: Sniffs out the TA weaponry carried by an enemy ship.

Designation: ws3 as in 8/CA.22ad|rd|td|***|ws3

Prerequisite: TA-41 Mark II Weapons Sniffer

Development Cost: 100 MT plus 200 MT one-time payment to TA-11 IMER for scientific information necessary to create this sniffer.

Item Cost: 10% of base cost of warship. Can be on any warship of 5 or more guns.

When inoperable: When ship is hulked or destroyed. Repaired when hulked ship is repaired.

Narrative: The Weapons Sniffer smells out which TAs are mounted on an enemy ship to any range on the battle board. The ws *does* determine mark of the TA, *including* those the owner has not developed.

TA-43 Weapons Cloaking Device

Descriptive: Conceals TAs carried on a ship from all marks of the Weapons Sniffer.

Designation: (ws) as in 8/CA.22ad|rd|td|***|(ws)

Prerequisite: TA-42 Mark III Weapons Sniffer

Development Cost: 100 MT

Item Cost: 10% of base cost of warship. Can be on any warship of 5 or more guns.

When inoperable: When ship is hulked or destroyed. Repaired when hulked ship is repaired.

Narrative: The Weapons Cloaking Device protects a ship from TAs 40-42.

TA-44 Mark I Range Finder

TA-45 Mark II Range Finder

TA-46 Mark III Range Finder

Descriptive: The Range Finder enhances the accuracy of guns.

Designation: Mark I: rf¹ as in 8/CS.22ad|rd|td|***|rf¹ or 6/ZN.54sd|rf¹, etc.
 Mark II: rf² as in 8/CS.22ad|rd|td|***|rf² or 6/ZN.54sd|rf², etc.
 Mark III: rf³ as in 8/CS.22ad|rd|td|***|rf³ or 6/ZN.54sd|rf³, etc.

Prerequisite: Mark I: None. Must be on 5-gunner (long guns) or larger
 Mark II: TA-44 Mark I Range Finder. Must be on 7-gunner or larger.
 Mark III: TA-45 Mark II Range Finder. Must be on 9-gunner or larger.

Development Cost: Mark I 90 MT, Mark II 30 MT, Mark III 20 MT

Item Cost: All marks add 10% to base 1 cost of warship.

When inoperable: Destroyed as a TA per Damage Table on page 90. Repairs, p.92.

Narrative: The Range Finder increases gunfire accuracy, including TA-180 Plasma Gun (page 142). Players move an attacker's attack factor down the Hits Table (page 90) to the next better odds. Example: 6/Z.44rf allots 6 attack and 6 defense against the 5 defense of targeted 6/CS.91. That's a 6:5 attack. The Mark I Range Finder improves the attack to 5:4.

Mark I – Accuracy increased by 1 set of odds on the Hits Table.

Mark II – Accuracy increased by 2 sets of odds on the Hits Table.

Mark III – Accuracy increased by 3 sets of odds on the Hits Table.

Any mark of rf against any mark of Range Loser or any mark of TA-55 Battle Stars cancels all accuracy adjustments for both ships.

TA-47 Mark I Range Loser

TA-48 Mark II Range Loser

TA-49 Mark III Range Loser

Descriptive: The Range Loser reduces the accuracy of enemy gunfire.

Designation: Mark I: rl¹ as in 8/CS.22ad|rd|td|***|rl¹ or 6/ZN.54sd|rl¹, etc.
 Mark II: rl² as in 8/CS.22ad|rd|td|***|rl² or 6/ZN.54sd|rl², etc.
 Mark III: rl³ as in 8/CS.22ad|rd|td|***|rl³ or 6/ZN.54sd|rl³, etc.

Prerequisite: Mark I: TA-44 Mark I Range Finder. Must be on 5-gunner or larger.
 Mark II: TA-47 Mark I Loser. Must be on 5-gunner or larger.
 Mark III: TA-48 Mark II Range Loser. Must be on 5-gunner or larger.

Development Cost: Mark I 10 MT, Mark II 20 MT, Mark III 30 MT

Item Cost: Marks I, II and III add 10% to base 1 cost of warship.

When inoperable: Destroyed as a TA per Damage Table on page 90. Repairs, p.92.

Narrative: The Range Loser reduces enemy gunfire accuracy, including TA-180 Plasma Gun (page 142). Players move an attacker's attack factor up the Hits Table (page 90) to the next worse odds. Example: 6/Z.44rf allots 6 attack and 6 defense against the 5 defense of targeted 6/CS.91. That's a 6:5 attack. The Mark I Range Loser weakens the attack to 7:6.

Mark I – Accuracy reduced by 1 set of odds on the Hits Table.

Mark II – Accuracy reduced by 2 sets of odds on the Hits Table.

Mark III – Accuracy reduced by 3 sets of odds on the Hits Table.

Any mark of rl against any mark of Range Finder or any mark of TA-55 Battle Stars cancels all accuracy adjustments for both ships.

TA-50 Goodie Unit Cargo Shuttle

Descriptive: Enables a cargo ship to safely shuttle Goodie Units or Factories to the surface of a planet of value without exposing the ship to enemy ambush. The gus is strictly an orbital space cargo shuttle.

Designation: gus as in 8/A.22gus, 6/C.13gus, 7/B.7gus⁴, etc. (the superscript ⁴on 7/B.7gus⁴ indicates the number of gus carried by that ship – not used if only 1 gus carried)

Prerequisite: None. Must be on a C Class merchant ship or larger (page 87)

Development Cost: 8 MT

Item Cost: 8 MT. Up to 4 carried per merchant ship; must be on C Class or larger.

When inoperable: When mother ship is hulked or destroyed. Destroyed by one gun or torpedo fired at it or by abandonment. Can be junked.

Narrative: The Goodie Unit Cargo Shuttle (gus) is used by the large and valuable merchant ships of the C Class or larger (page 87). A large merchant ship carrying a gus warps onto the battle board to colonize an enemy's the planet of value. Instead of moving to the planet to drop off GU or FY, the mother ship retreats to a distance of 1000 and uses the shuttle to ferry 1 GU or FY at a time to the planet's surface. A gus from a large merchant can unload cargo from an accompanying small merchant.

A gus may be replaced for 8 MT. The mother ship merely warps in and warps out of any production center star and considers it mounted.

The danger posed by enemy ships equipped with the TA-499 series of Ambush Drive (page 214) lying in ambush below a planet's or moon's surface makes use of this TA advisable later in a game.

TA-55 Marks e, ee and eee Battle Stars (Elite Crew)

Descriptive: Intensive crew training can improve the efficiency of a warship, but nothing except battle can develop that crew into an elite unit. An elite crew improves the offensive strength of a warship.

Designation: e, ee or eee as in 8/CS.44e, 7/CA.43sd | ti² | ee, 6/CB.45td³ | ti³ | eee, etc.

Prerequisite: None. Must be on a 5-gun warship or larger (page 88). Not awarded to a warship carrying any mark of TAs 44-49.

Development Cost: 80 MT (covers cost of training elite crews for remainder of game).

Item Cost: None.

When inoperable: When ship is destroyed.

Narrative: Battle Stars, which are represented by an "e" for efficiency, are awarded to a ship the year after receiving battle damage. A second incident of battle damage earns an "ee" and a third incident earns an "eee." The effect is the same as TAs 44-46, except that the e's are not awarded to a warship carrying any mark of TAs 44-49 (page 117).

The "e" moves the ship's attack factor down the Hits Table (page 90) to the next better odds. Example: 6/Z.44e allots 6 attack and 6 defense against the 5 defense of targeted 6/CS.91. That's a 6:5 attack. The "e" improves the attack to 5:4.

Mark e – Accuracy increased by 1 set of odds on the Hits Table.

Mark ee – Accuracy increased by 2 sets of odds on the Hits Table.

Mark eee – Accuracy increased by 3 sets of odds on the Hits Table.

Any mark of "e" against any opposing mark of "e" or against any mark of TAs 44-49 Range Finders and Range Losers (page 117) cancels all accuracy adjustments for both ships.

TA-60 Mark I Fleet Formation Keeper

Descriptive: The Fleet Formation Keeper reduces the random scattering effect during warp in described on page 81, Warping Onto Battle Board.

Designation: f as in 8/CS.12f, 10/CB.85f, 6/DR.13f, etc.

Prerequisite: None

Development Cost: 40 MT

Item Cost: 8 MT – May be mounted on any ship with 5 or more guns.

When inoperable: When the ship or f is destroyed as per damage charts on page 90.

Narrative: When ships warp into a solar system, a die roll (page 81) determines the direction of entry. The f-carrying ship selects the direction of entry for itself and 1 other ship. The two ships must be together after warp in. The other ship may be of any type and does not have to carry the f. Remaining ships that may be in the fleet must roll for direction of entry before the f-ship and its companion select their entry.

TA-61 Mark II Fleet Formation Keeper

Descriptive: Same as the Mark I.

Designation: ff as in 8/CS.12ff, 10/CB.85ff, 6/DR.13ff, etc.

Prerequisite: TA-60 Mark I Fleet Formation Keeper

Development Cost: 20 MT

Item Cost: 8 MT – May be mounted on any ship with 5 or more guns.

When inoperable: When the ship or ff is destroyed as per damage charts on page 90.

Narrative: Same as the Mark I, except that the ff-carrying ship can group as many as 3 other ships. The ships must be together after warp in.

TA-62 Mark III Fleet Formation Keeper

Descriptive: Same as the Mark I.

Designation: fff as in 8/CS.12fff, 10/CB.85fff, 6/DR.13fff, etc.

Prerequisite: TA-61 Mark II Fleet Formation Keeper

Development Cost: 60 MT

Item Cost: 8 MT – May be mounted on any ship with 5 or more guns.

When inoperable: When the ship or fff is destroyed as per damage charts on page 90.

Narrative: Same as the Mark III, except that the fff-carrying ship can select the entry direction for any number of friendly ships warping into a star the same year. The ships can be from 2 or more fleets and each ship's direction entry is selected by the fff-ship. Grouping is optional.

TA-70 Mark I Tractor Beam

Descriptive: The Tractor Beam allows a large ship to control the movements of a single smaller ship.

Designation: t as in 8/DN.12t, 5/Z.85t, 6/P.13t, etc.

Prerequisite: None, except TA-110 Large Warship Capability if mounted on a CB.

Development Cost: 60 MT

Item Cost: 2 MT per gun – May be mounted on any warship with 5 or more guns.

When inoperable: The t is destroyed as per damage charts on page 90.

Narrative: The Mark I Tractor Beam has range 20 and is used to control the movements of another warship. The t-equipped warship is able to control a 1- to 10-gun warship or C Class merchant or smaller and direct the victim's speed and course as long as the victim stays within range 20 of the captor. This is accomplished by the captor filling in the victim's "Next Move" entry on the Battle Record, page 91. The victim cannot be coerced into making illegal movements. The victim's guns/defense and TAs are unaffected.

The larger ship dominates if opposing t-equipped ships meet. Same size ships neutralize all t on each other as long as they are within range 20. 3 or more t-equipped ships all cancel each other regardless of size. Damage reduces the number of t along with guns.

TA-71 Mark II Tractor Beam

Descriptive: The Mark II Tractor Beam allows a large ship to control the movements of two smaller ships simultaneously.

Designation: tt as in 8/DN.12tt, 5/Z.85tt, 6/P.13tt, etc.

Prerequisite: TA-70 Mark I Tractor Beam

Development Cost: 40 MT

Item Cost: 2 MT per gun – May be mounted on any warship with 5 or more guns.

When inoperable: The tt is destroyed as per damage charts on page 90.

Narrative: The Mark II Tractor Beam is the same as the Mark I except that the tt-equipped ship can control the movements of 2 non-tt-equipped victims simultaneously. This leads to the obvious tactic of the captor attempting to maneuver 2 victims into a collision. The Mark II confers no other advantage.

TA-80 Enhanced Maneuverability Capability

Descriptive: The Enhanced Maneuverability Capability allows a ship to accelerate or decelerate by 4 speed factors per turn and to execute one 90° turn per battle board square moved through.

Designation: // as in 8//S.12tt, 5//CS.85tt, 6//SH.13tt, etc.

Prerequisite: None

Development Cost: 20 MT

Item Cost: Adds 10% to a ship's base cost. Limited to a warship with 9 or fewer guns.

When inoperable: The // TA is destroyed as per damage charts on page 90. A ship with its // destroyed reverts to the normal / maneuverability capabilities.

Narrative: //-equipped ships may accelerate or decelerate by 4 speed factors per turn. Ships may execute one 90° turn per battle board square moved through. The course ending a turn is the course starting the next turn. See Maneuvering on the Battle Board, page 84.

TA-90 Cultural Diversity

Descriptive: Cultural Diversity allows players to design their own cultures.

Designation: None

Prerequisite: All players must agree to this TA, otherwise this TA is disallowed.

Development Cost: None. Allowed or disallowed at gamestart.

Item Cost: None

When inoperable: Never

Narrative: Each player is assigned 4 points to work a formula that designs the culture and economic model for his empire. The formula cannot be altered during a game.

Cultural Emphasis	Points Assigned	Result
Technology	0	Game's standard rules apply
	1	4 Research Universities allowed; 3 TAs/Cycom
	2	6 Research Universities allowed; 3 TAs/Cycom; multiple marks of 1 TA in single Cycom
	3	8 Research Universities allowed; 4 TAs/Cycom; multiple marks of 1 TA in single Cycom
Trading	0	Game's standard rules apply
	1	Every 10 MT (max. of 1000 MT) spent on trade returns 11 MT following Cycom
	2	Spend 10 MT (max. of 1000 MT) spent on trade returns 12 MT following Cycom
	3	Every 10 MT (max. of 1000 MT) spent on trade returns 13 MT following Cycom
Government	0	Game's standard rules apply
	1	Add 5% to gross income each Cycom (TA-34 Governmental Efficiency still applies)
	2	Add 10% to gross income each Cycom (TA-34 Governmental Efficiency still applies)
	3	Add 15% to gross income each Cycom (TA-34 Governmental Efficiency still applies)
Economics	0	Game's standard rules apply
	1	Ships cost 30% less, including first of class, TAs 20, 21 Mass Production disallowed
	2	Ships cost 40% less, including first of class, and are built instantly (TAs 20, 21 disallowed)
	3	Ships cost 50% less, including first of class, and are built instantly (TAs 20, 21 disallowed)
Military	0	Game's standard rules apply
	1	Player selects up to 6 marks of 1 TA at game start
	2	Player selects up to 8 marks of 2 TAs at game start
	3	Player selects up to 9 marks of 3 TAs at game start

TA-96, 97, 98, 99 Warp Speed 7, 8, 9, 10

Descriptive: These TAs allow an empire to build ships having a warp and battle board speed of 7, 8, 9 or 10, respectively.

Designation: 7, 8, 9, or 10, as in 8/CS, 10/SH, 7/BB, 9/P, etc.

Prerequisite: None. Must be developed in order. Other TAs that describe ships having a speed of 7 or greater cannot be developed until one or more of these TAs have been developed.

Development Cost: 20 MT for each TA, starting with TA-96.

Item Cost: See chart on page 88, and others as needed.

When inoperable: N/A

Narrative: The capability of moving a ship faster than speed 6 is a technology lost in the great flight from the ruins of your last empire.

TA-96 allows an empire to build ships having a warp and battle board speed of 7.

TA-97 allows an empire to build ships having a warp and battle board speed of 8.

TA-98 allows an empire to build ships having a warp and battle board speed of 9.

TA-99 allows an empire to build ships having a warp and battle board speed of 10.

Chapter 10



Group II

Warship Variations &

Specialty Ships



Group II – Specialty Ships & Warship Variations

TA-100 Warp Juice Mining Module – wjm¹ – 64 MT

TA-100.2 Warp Juice Mining Module – wjm² – 4 MT

TA-100.4 Warp Juice Mining Module – wjm⁴ – 4 MT

TA-101 Mark I Hyggyns Mining Ship – 10/HMS – 4 MT

TA-102 Mark II Hyggyns Mining Ship – z10/HMS – 4 MT

TA-103 Planet Butcher – PBU – 80 MT

TA-104 Super Planet Butcher – SPB – 40 MT

TA-105 Evil Planet Butcher – EPB – 20 MT

TA-106 Extreme Deification and Exploitation of Nirvana – EDEN – 4 MT

TA-107 Bluu Mining Ship – blu – 80 MT

TA-108 Radd Mining Ship – rad – 80 MT

TA-109

TA-110.10, .11, .12, .13, .14, .15, .16, .17, .18, .19, .20, .21, .22, .23, .24, .25, .26, .27, .28, .29, .30, .31 and .32 Big Warships – 8/M – 8 MT each

TA-114

TA-115

TA-116 Raider – R, RR or RRR – 20 MT

TA-117 Double-Gun Warship – _ – 90 MT

TA-118

TA-119

TA-120 Q Ship – QA, QB, QC, QD or QE – 20 MT

TA-121 Armed Merchant – AA, AB, AC, AD or AE – 4 MT

TA-122 Solar System Defense Ship – ^{ss} – 30 MT

TA-123

TA-124

TA-125

TA-126

TA-127

TA-128

TA-129

TA-130

TA-131

TA-132

TA-133

TA-134

TA-135

TA-136

TA-137

TA-138

TA-139

TA-140 Light Scout Carrier – CVL – chart
TA-141 Heavy Scout Carrier – CVA – chart
TA-142 Fighter Bay Modules – fb – 10 MT
TA-143 Fighter Bay Modules for Merchants – fb – 10 MT
TA-144
TA-145
TA-146 Archaeology Retrieval Craft – White – ARW –
TA-147 Archaeology Retrieval Craft – Red – ARR –
TA-148
TA-149
TA-150 Repair Ship – RS – 30 MT
TA-151 Repair/TA-Upgrade Ship – RSH – 70 MT
TA-152
TA-153
TA-154
TA-155 Stores Replenishment Ship – SRS – 8 MT (page 144)
TA-156
TA-157
TA-158
TA-159
TA-160 Goodie Unit Factory Facility – GUFF – 60 MT
TA-161
TA-162
TA-163
TA-164
TA-165
TA-166
TA-167
TA-168
TA-169

TA-170 Tow Ship – TS – 20 MT
TA-171 Unpowered Cargo Barge – UCB – 4 MT
TA-172
TA-173
TA-174
TA-175
TA-176
TA-177
TA-178
TA-179
TA-180
TA-181
TA-182
TA-183
TA-184
TA-185
TA-186
TA-187
TA-188
TA-189
TA-190a, b, c Marks I, II, III Heliostatic Hellfire Machine – HH – 60, 20, 8 MT
TA-191
TA-192 Mark I Moon Fortress – MF8 – 40 MT
TA-193 Mark II Moon Fortress – MF26 – 4 MT
TA-194 Mark III Moon Fortress – MF24 – 4 MT
TA-195 Mark IV Moon Fortress – MF32 – 4 MT
TA-196
TA-197
TA-198
TA-199 Advanced Infection & Disease Ship – AIDS – 90 MT

TA-100 Warp Juice Mining Module

TA-100.2 Warp Juice Mining Module

TA-100.4 Warp Juice Mining Module

Descriptive: Warp juice is a mysterious quantity that is part matter, part time and part eighth dimension. It is found in the near vicinity of a Neutron star, Pulsar or Magnetar and is necessary to power the warp drive of ships that wish to travel among the stars. This will become a high-priority TA by the end of the first Katun.

Designation: wjm as in 8/CU.14wjm¹, 6/CS.25wjm², 8/CA.36wjm⁴, etc.

Development Cost: 64 MT for TA-100 wjm¹
 4 MT for TA-100.2 wjm²
 4 MT for TA-100.4 wjm⁴

Prerequisite: TA-100: TA-201 Radiation Deflector and TA-203 Magnetism Deflector.
 TA-100.2: requires TA-100
 TA-100.4: requires TA-100.2

Cost: 20 MT – wjm¹ mines warp juice for 1 fleet; at Pulsar only, 4-gun warship only.
 40 MT – wjm² mines warp juice for 2 fleets; at Neutron Star only, 5-gun warship only.
 60 MT – wjm⁴ mines warp juice for 4 fleets; at Magnetar only, 5-gun warship & larger.

When inoperable: When ship is hulked or destroyed. Warp juice cannot be stockpiled.

Narrative: An empire collectively produces enough warp juice to power 4 fleets to make warp jumps per Cycom (see Warp Movement vs. Warp Juice on page 72). The cost of warping cannot be split between 2 fleets each making partial warp movements in a Cycom.

Any number of wjm¹-equipped ships can mine warp juice from a single Pulsar.

Any number of wjm²-equipped ships can mine warp juice from a single Neutron Star.

Any number of wjm⁴-equipped ships can mine warp juice from a single Magnetar.

A wjm-equipped ship must be undamaged to be able to mine warp juice, although it can function with a reduced supply of expendable munitions.

Any fleet not provided warp juice may not make a warp jump that Cycom. Destruction of a wjm-equipped ship does not affect fleets making warp movements that same Cycom, only those that might wish to warp move the following Cycom.

The parent ship may carry any TAs available to a ship of that size. TAs 201 Radiation Deflector and 203 Magnetism Deflector, which are required for a ship to mine warp juice, cost extra.

A wjm-equipped ship has a liability in that mining activity shows up as a warp ripple and is reported on each Cycom's Warp Ripple Report (page 65). Each wjm-equipped ship engaged in mining must make a warp ripple report, even if several are at the same star. That may cause multiple warp ripple reports emanating from a single star.

TA-101 Mark I Hyggyns Mining Ship

Descriptive: The Mark I Hyggyns Mining Ship is stationed at a protostar to mine a hideously addictive drug called Hyggyns Overdrive Potion (HOP) that is much in demand by the downtrodden population of your puny empire. The ship has powerful space dust gathering and processing equipment, which is used to create HOP. The king thinks it is a fine idea to make an individual HOP because productivity is doubled and lifespan halved.

Designation: HMS as in 10/HMS.13, 10/HMS.14, 10/HMS.71, etc.

Prerequisite: TA-200 Asteroid Deflector, TA-202 Heat Deflector and TAs 96-99 Warp Speed 7, 8, 9 and 10

Development Cost: 4 MT

Item Cost: 28 MT, which *includes* cost of built-in TA-200 ad and TA-202 hd deflectors. It may carry other deflector TAs. Always built to speed 10. The ship has no guns.

When inoperable: When ship is hulked or destroyed

Narrative: An HMS must be stationed at a Protostar or T Tauri star during an entire Cycom (cannot warp in or out). Each Cycom the HMS spends mining a Protostar or T Tauri star results in 4 MT (1-MT/year) of increased income per Cycom to an empire's IMLO Bank account. The income is recorded as would that from a 1-MT/year star except that the source is an HMS.

Only one HMS of any nationality may work a Protostar or T Tauri star at a time.

A Hyggyns Mining Ship will not surrender to a warship as would an unarmed merchant ship. It must be destroyed. A fruitless pursuit on the battle board does not interrupt its HOP harvesting activities. The diagram on page 76 illustrates the mining location of an active HMS, which may be a severe handicap for escaping the attack of a hostile marauder.

TA-102 Mark II Hyggyns Mining Ship

Descriptive: Same as the Mark I.

Designation: HMS as in a10/HMS.13, z10/HMS.14, c10/HMS.71, etc., the only difference between the Mark I and the Mark II is the addition of the TA-400 series of Ambush Drive.

Prerequisite: TA-101 Mark I Hyggyns Mining Ship and TA-499a Ambush Drive

Development Cost: 4 MT

Item Cost: 33 MT, which *includes* cost of built-in TA-200 ad and TA-202 hd deflectors and a mark of the TA-499 series of Ambush Drive. It may carry other deflector TAs. Always built to speed 10. The ship has no guns.

When inoperable: When ship is hulked or destroyed

Narrative: Same as the Mark I.

TA-103 Planet Butcher

Descriptive: The Planet Butcher extracts everything of worth from a planet of value at an enemy-colonized Main Sequence star. This evil ship enslaves sentient beings, removes valuable minerals and alloys from the soil, kills off all native life forms, sterilizes the oceans and poisons the atmosphere. The owner of the Planet Butcher gets a one-time reward for this despicable act.

Designation: pbu as in 6/E.223pbu, 8/E.17pbu, 4/E.13pbu, etc. (ship is reported to enemy as E Class merchant, until it does its dirty work when the pbu function is revealed).

Prerequisite: None

Development Cost: 80 MT

Item Cost: Same as an Echo Class Cargo Ship (page 87). The ship has no guns or TAs.

When inoperable: When the pbu-equipped ship is hulked or destroyed

Narrative: A pbu slaughters enemy 1-MT/year planets for a profit of 60 MT. The planet of value is permanently rendered incapable of MT production. The pbu's owner announces the completed butchery to all other players by requesting that a w for worthless be added next to the star's symbol on all star charts.

Procedure: First Cycom – The pbu-equipped ship arrives at the star to be butchered

Second Cycom – The pbu conducts the butchering process

Third Cycom – pbu departs; owner gets 60 MT at start of Cycom. All other players are notified that a w has been added to the star's map symbol.

No harm is done to the planet if butchery is interrupted before completion.

TA-104 Super Planet Butcher

Descriptive: Same as TA-103 Planet Butcher.

Designation: spb as in 6/E.223spb, 8/E.17spb, 4/E.13spb, etc. (ship is reported to enemy as E Class merchant, until it does its dirty work when the spb function is revealed).

Prerequisite: TA-103 Planet Butcher

Development Cost: 40 MT

Item Cost: Same as an Echo Class Cargo Ship (page 87). The ship has no guns or TAs.

When inoperable: When the spb is hulked or destroyed

Narrative: An spb slaughters enemy 1-MT/year planets for a profit of 90 MT. Otherwise same as TA-103 pbu.

TA-105 Evil Planet Butcher

Descriptive: Same as TA-103 Planet Butcher.

Designation: epb as in 6/E.223epb, 8/E.17epb, 4/E.13epb, etc. (ship is reported to enemy as E Class merchant, until it does its dirty work when the epb function is revealed).

Prerequisite: TA-103 Planet Butcher and TA-104 Planet Butcher

Development Cost: 20 MT

Item Cost: Same as an Delta Class Cargo Ship (page 87). The ship has no guns or TAs.

When inoperable: When the epb is hulked or destroyed

Narrative: An epb slaughters your own 1-MT/year planets for a profit of 120 MT. Otherwise same as TA-103 pbu.

TA-106 Extreme Deification and Exploitation of Nirvana

Descriptive: The Extreme Deification and Exploitation of Nirvana (Eden Project) is conducted by a specially equipped Alpha Class Cargo Ship that hypes the development of the planet of value at an uncolonized Main Sequence star to production extremes hitherto unknown to sentient life.

Designation: EDEN as 6/EDEN.3, 4/EDEN.2, etc.

Prerequisite: None

Development Cost: 4 MT

Item Cost: Same as an Alpha Class Cargo Ship (page 87) plus 64 MT for cargo of 4 GU.

When inoperable: When ship is hulked or destroyed

Narrative: An EDEN ship must be stationed at an uncolonized Main Sequence star during an entire Cycom (cannot warp in or out). Upon arrival, the EDEN ship unloads its cargo of 4 GU on the planet of value. These GU cannot be recovered. Each Cycom the EDEN ratchets up MT/year production until eventually a revolt ensues.

When	Total Output per Cycom
Arrival Cycom	0-MT (normal warp ripple report made, page 71)
1st Cycom	0-MT
2nd Cycom	1-MT/year – 4 MT
3rd Cycom	2-MT/year – 8 MT
4th Cycom	4-MT/year – 16 MT
5th Cycom	8-MT/year – 32 MT
6th Cycom	16-MT/year – 64 MT
7th Cycom	32-MT/year – 128 MT
8th Cycom	32-MT/year – 128 MT
9th Cycom	32-MT/year – 128 MT
10th Cycom, etc.	Planet revolts; location of EDEN project announced to all other empires at the end of every Cycom; production remains stable at 32-MT/year or 128-MT/Cycom. A w is added to star's map symbol.

An empire may build no more than four EDENs at a time because the powerful environmentalist political faction will overthrow your government if you despoil more than four pristine planets at a time.

If an EDEN is destroyed or departs the planet it is hyping, the planet drops to zero production at the end of the current Cycom. An EDEN can end one project, reload the 4 GU required, and start again at another location with the same results as described in the chart above. A w for worthless should be placed by the Main Sequence star's symbol after an EDEN has operated for 10 Cycoms at that star. The placement of the w must be reported to all other empires in the game. A Main Sequence star with a w cannot be used for another Eden Project, nor can it be colonized normally with 1 GU.

TA-107 Bluu Mining Module

Descriptive: Bluu is a rare compound that is combined with radd to increase an empire's industrial output. It is found in the near vicinity of a Blue Supergiant or Blue Giant star and to a lesser extent at a Red Supergiant or Red Giant star.

Designation: blu as in 4/CA.74blu, 6/PZ.32blu, 8/CB.39blu, etc.

Prerequisite: TA-201 Radiation Deflector and TA-202 Heat Deflector. Must be mounted on a ship with 5 or more guns.

Development Cost: 80 MT

Item Cost: 50 MT

When inoperable: When parent ship is hulked or destroyed or parent ship's blu TA is destroyed.

Narrative: Must operate as half a pair of ships to mine blu and radd at Blue Supergiant, Blue Giant, Red Supergiant or Red Giant stars.

The two ships carrying the blu and rad TAs produce 10-MT/year or 40-MT/Cycom. The MT are deposited in an empire's IMLO Bank account each Cycom. Production gained by mining a giant star begins the Cycom after the arrival of the mining ship team. Production ends the Cycom after the departure or destruction of the mining team.

Must be mounted on a ship with 5 or more guns.

The blu- and rad-equipped mining ships are stationed as a team off the north (blu) and south (rad) poles of a giant/supergiant star while conducting mining operations. This is why there must always be two ships. For game purposes, the ships appear on the Battle Board at range 4 to the north and south of the planet of value.

TA-108 Radd Mining Module

Descriptive: Radd is a rare compound that is combined with bluu to increase an empire's industrial output. It is found in the near vicinity of a Red Supergiant or Red Giant star and to a lesser extent at a Blue Supergiant or Blue Giant star.

Designation: rad as in 4/CA.74rad, 6/PZ.32rad, 8/CB.39rad, etc.

Prerequisite: TA-201 Radiation Deflector and TA-202 Heat Deflector. Must be mounted on a ship with 5 or more guns.

Development Cost: 80 MT

Item Cost: 50 MT

When inoperable: When parent ship is hulked or destroyed or parent ship's rad TA is destroyed.

Narrative: Must operate as half a pair of ships to mine radd and bluu at Red Supergiant, Red Giant, Blue Supergiant or Blue Giant stars.

The two ships carrying the rad and blu TAs produce 10-MT/year or 40-MT/Cycom. The MT are deposited in an empire's IMLO Bank account each Cycom. Production gained by mining a giant star begins the Cycom after the arrival of the mining ship team. Production ends the Cycom after the departure or destruction of the mining team.

Must be mounted on a ship with 5 or more guns.

The blu- and rad-equipped mining ships are stationed as a team off the north (blu) and south (rad) poles of a giant/supergiant star while conducting mining operations. This is why there must always be two ships. For game purposes, the ships appear on the Battle Board at range 4 to the north and south of the planet of value.

TA-110.10, .11, .12, .13, .14, .15, .16, .17, .18, .19, .20, .21, .22, .23, .24, .25, .26, .27, .28, .29, .30, .31 and .32 Big Warships

Descriptive: Big warships are difficult to build. The research is time-consuming and the industrial infrastructure required to build such powerful leviathans is expensive.

Designation: See page 88

Prerequisite: Must be developed in numeric order: TA-110.11, .12, .13, etc.

Development Cost: 8 MT for each TA, starting with TA-110.10, the 10-gunner.

Item Cost: See page 88

When inoperable: When ship is hulked or destroyed

Narrative: The chart on page 88 shows the cost, number of guns and speeds available.

TA-116 Raider

Descriptive: The Raider is an excellent ship to conduct long-range patrols that are designed for maximum terror and destruction. Cost is held down by limiting warp speed to 6 but increasing battle board speed to 10. There are also Raiders with warp speed 5 or 4.

Designation: R (5 guns), RR (7 guns), RRR (9 guns) as in 6.10/R.2 or 6.10/RRR.15, etc.

Prerequisite: TAs 96-99 Warp Speed 7, 8, 9 and 10.

Development Cost: 16 MT

Item Cost: The 6.10 Raider costs the same as a 9-speed CS, CM or S (5-, 7- or 9-gunner), respectively. Also available are 5.10 and 4.10 Raiders for the cost of an 8- or 7-speed CS, CM or S, respectively (page 88).

When inoperable: When ship is hulked or destroyed

Narrative: The R, RR and RRR can carry TAs available to a 5- 7- or 9-gun warship, except TA-117 Double-Gun Warships. Other ships cannot be upgraded to a Raider, nor may a Raider be upgraded outside its type.

TA-117 Double-Gun Warships

Descriptive: Double-Gun Warships have a secondary armament of 20-range guns that equals the number of 40-range guns.

Designation: _ as in 7/CB.20 or 6/M.2, etc. (underline the ship's size designation). The _ designation is not visible to the enemy on the battle board.

Prerequisite: TA-110.10 through TA-110.32 as needed.

Development Cost: 90 MT

Item Cost: Same as and limited to warships on page 88 plus 30%; must be CA or larger. The 30% added cost exactly negates the 30% cost reduction earned with TAs 20 and 21 Mass Production Capability (page 111), which returns ship cost to that shown on page 88.

When inoperable: When ship is hulked or destroyed

Narrative: A Double-Gun Warship has a secondary armament of 20-range guns. The number of those guns is equal to the number of 40-range guns and may fire at the same time. One secondary gun is destroyed each time a 40-range gun is destroyed. The short-range guns fire at double strength (7 guns = 14), but may not fire on overload. A ship's defensive strength is based on long guns and is unaffected by firing short guns. Example: A

TA-120 Q Ship

Descriptive: The Q Ship looks like a merchant vessel but carries guns and TAs. It always gets off one surprise salvo (guns only) at an enemy warship. It also carries cargo.

Designation: Q as in QA (Q Petunia), QB (Q Heavy Cruiser) or QC (Q Destroyer). The Q part of the designation is not visible to the enemy, who thinks the ship is a large merchant.

Prerequisite: None for QC and QB. TA-110.10 through TA-110.16 Big Warships for QA

Development Cost: 12 MT

Item Cost: See chart below

When inoperable: The Q function is revealed after 1 salvo is fired. The ship itself is hulked or destroyed normally. The identity of the Q Ship is apparent if the Q Ship has damage. Aggressive tactics that make the nature of the Q Ship suspicious or obvious do not negate the Q Ship's surprise salvo capability.

Narrative: The primary advantage of the Q Ship is that it looks like a merchant ship, and even carries cargo, but it also carries guns and TAs appropriate to its gun size. See chart below. The Q Ship will get off one surprise salvo (guns only) that cannot be answered by the target. The ship is fought normally after the surprise salvo.

The sequence of moves on the battle board for a Q Ship is as follows:

1. Q Ship and target both move
2. Q Ship fires surprise salvo. Target's gunfire directed at the Q Ship goes awry. Gunfire from any other ship at the Q Ship also goes awry. Target ship's gunfire at other ships is unaffected. Target ship's defense functions normally. Target's TA weaponry, such as torpedoes, for example, function normally.
3. Q Ship and target both move
4. Q Ship and target fire at each other normally. Other ships firing at a Q Ship also fire normally.

The surprised warship may not open fire at the Q Ship until the Q Ship gets one broadside off. This does not preclude the warship opening fire at any time it wishes in an effort to destroy the "merchant," but if the Q Ship is the first to open fire, or if it opens fire simultaneously, the target cannot fire effectively at the Q Ship until the next turn.

Designation	Name	No. of Guns	Gun Range	Cargo Capacity	Speed vs. MT Cost					Base 1 Cost
					8	7	6	5	4	
QA	Q Ship A	16	40	8 GU	778	612	490	417	368	245
QB	Q Ship B	8	40	4 GU	272	212	170	145	127	85
QC	Q Ship C	4	40	2 GU	179	139	111	95	83	56

TA-121 Armed Merchant Ship

Descriptive: An Armed Merchant Ship looks like a merchant vessel but carries guns and TAs in addition to cargo. The number of guns and cargo capacity are reduced to keep the cost of the ship down to that of a fat helpless merchant ship of the common variety.

Designation: A as in AA, AB, AC, AD or AE. The designation is visible to the enemy.

Prerequisite: None

Development Cost: 12 MT

Item Cost: See chart below

When inoperable: When the ship is hulked or destroyed.

Narrative: The primary advantage of the Armed Merchant Ship is that it carries guns and TAs appropriate to the number of guns carried. This prevents small wandering predators from capturing the merchant without a fight.

The short-range guns have a range of 20 and fire at double strength (3 guns = 6). Defense is normal.

Desig- nation	Name	No. of Guns	Gun Range	Cargo Capa- city	Speed vs. MT Cost					Base Cost
					8	7	6	5	4	
AA	A Armed Merch.	6	40	16 GU	518	419	335	286	254	168
AB	B Armed Merch.	5	40	8 GU	364	284	227	195	173	114
AC	C Armed Merch.	5	20	4 GU	248	194	155	133	119	78

TA-122 Solar System Defense Ship

Descriptive: The Solar System Defense Ship is assigned to protect the planet of value and nearby ships, but lacks warp drive and some crew support facilities, such as the cloning labs to generate a new crew after each warp jump. This results in a powerful ship at reduced cost that cannot roam the galaxy.

Designation: ^{ss} as in 6/DR^{ss}.10, 10/M^{ss}.2, etc. The designation is visible to the enemy.

Prerequisite: TA-110.10 through TA-110.32 as needed. Used for 3-gunners and larger.

Development Cost: 30 MT

Item Cost: 33% less than a standard warship (page 88)

When inoperable: When the ship is hulked or destroyed.

Narrative: The primary advantage of the Solar System Defense Ship (^{ss}) is that it costs 33% less than a standard warship that has warp drive. The ^{ss} may carry any TA appropriate to the size of the ship. It may be upgraded to a ship with warp drive using TAs 22/23 Upgrading Ships by paying the cost difference between an ^{ss} ship and a regular warship of the same size on page 88 plus the upgrade cost (10%) if using TA-22.

TA-130 Torpedo Cruiser

Descriptive: The Torpedo Cruiser (CT) is a greatly modified Heavy Cruiser (page 88) that can carry many different types of torpedoes all on 1 platform.

Designation: CT as in 6/CT.101, 10/CT.29, etc. Designation is visible to the enemy.

Prerequisite: The TAs for the torpedoes carried.

Development Cost: 4 MT

Item Cost: Approximately 10% less than a CA (page 88) plus cost of installing the torpedoes and other TAs carried. Here is the base cost of a CT: 10/CT: 330 MT, 9/CT: 220, 8/CT: 175, 7/CT: 137, 6/CT: 110, 5/CT: 94, 4/CT: 82

When inoperable: When the ship is hulked or destroyed. The torpedoes carried are destroyed as other TAs (page 90).

Narrative: The advantage of a Torpedo Cruiser is that it costs slightly less than a Heavy Cruiser (page 88), but it can carry all the torpedoes suitable for an 8-gun warship on a single platform. The negative is that the ship has no guns, just defense, which is destroyed in battle just as are guns/defense on a normal warship. The CT always uses maximum defense.

The CT cannot be upgraded, except to increase speed or add more torpedoes, deflectors or other TAs suitable for a CA. The torpedo TAs the CT can carry and fire are:

TA-300-306 Unguided Torpedo (8 carried), & TA-307 Torpilleur Capability (Unguided)

TA-315 Mark VI Phyton Torpedo (attack 16); Phyton *disallows* any Unguided Torpedo

TA-320-325 Homing Torpedo (8 carried), & TA-327 Torpilleur Capability (Homing)

TA-330-335 Toss Torpedo (8 carried), and TA-337 Torpilleur Capability (Toss)

TA-340-345 Asteroid Torpedo (32 rocks carried)

TA-350-355 Meandering Medusa (2 carried)

TA-360 Super Meandering Medusa (2 carried)

TA-370-375 Negative Energy Torpedo, & TA-376 Torpilleur Capability (Neg. Energy)

TA-380-383 Confusion Torpedo (8 carried)

TA-390-393 Dislocation Torpedo (8 carried)

TA-400-402 White Hole Torpedo (2 carried), & TA-403-405 White Hole Torpedo

TA-410-413 Time Stasis Torpedo (2 carried)

TA-140 Light Scout Carrier

Descriptive: The Light Scout Carrier's sole function is to carry Light Scouts or Heavy Scouts from star to star using warp drive.

Designation: CVL as in 8/CVL.5 or 10/CVL.13. The designation is visible to the enemy, as well as the number and type of Light Scouts (LS) or Heavy Scouts (HS) transported.

Prerequisite: TA-170 Tow Ship

Development Cost: 4 MT

Item Cost: As per chart on the next page

When inoperable: When the CVL and all scouts are hulked or destroyed.

Narrative: The CVL carries 6 1-gun Light Scouts (LS) or 3 2-gun Heavy Scouts (HS). Both the LS and HS carry short guns (range 20) that fire at double strength. Defense is normal.

The CVL can carry a mixed load of HS and LS. Example: 7/CVL.7 (2 8//HS, 2 9//LS). There is no launch time; the LS or HS departs its mother CVL in any direction, at any speed and at any time it wishes. Landing is similar: Simply move the LS or HS to the same location at the end of a battle board move as the CVL and consider the LS or HS landed.

The LS and HS may carry only Group III Deflector TAs and Group IV Torpedo TAs as appropriate for a ship of such small size. The CVL carries no guns and has no defense. It may carry Group III deflector TAs.

The HS and LS have unlimited maneuverability capability (signified by the //) in that they can make right-angle turns or reverse course at will without attention paid to the number of engines required to do so. Obviously, altering course or speed is not possible if the engines have been destroyed.

The CVL and its complement of scouts must be built simultaneously. If the CVL is lost, all its scouts are lost at the end of the year (not Cycom) because the LS and HS do not have warp drive or long-term crew life support facilities. In the rare case when the number of LS and HS surviving a battle exceeds the capacity of a surviving CVL, the CVL can remain at the battle site and support any number of LS and HS until another CVL arrives to transport the excess.

TA-141 Heavy Scout Carrier

Descriptive: Same as TA-140 Light Scout Carrier except that it has double the carrying capacity.

Designation: CVA as in 8/CVA.5 or 6/CVA.13. The designation is visible to the enemy, as well as the number and type of Light Scouts (LS) or Heavy Scouts (HS) transported.

Prerequisite: TA-140 Light Scout Carrier

Development Cost: 4 MT

Item Cost: As per chart on the next page

When inoperable: When the CVA and all its scouts are hulked or destroyed.

Narrative: The CVA carries 12 1-gun Light Scouts (LS) or 6 2-gun Heavy Scouts. Operational characteristics same as TA-140 Light Scout Carrier.

Designation	Number of Guns	Gun Range	HS or LS Capacity	Cost vs. Speed					Base 1 Cost	MT Cost
				10	9	8	7	6		
CVA	0	n/a	6 or 12	136	94	72	56	46	2x CVL	n/a
CVL	0	n/a	3 or 6	68	47	36	28	23	11.4	n/a
HS	2	20	n/a	20	13	11			3.33	n/a
LS	1	20	n/a	13	9	7			2.22	n/a
fb	0	n/a	1 or 2	n/a	n/a	n/a	n/a	n/a	n/a	10

TA-142 Fighter Bay Modules

Descriptive: The Fighter Bay Modules are self-contained hangars that can be attached to the sides of a warship. The modules can carry either the Light Scout (LS) or the Heavy Scout (HS)

Designation: fb1, fb2, fb3, etc., the digit representing the number of fb attached to the warship as in 8/CS.5fb1 or 6/Z.13ad|rd|md|fb4. The designation, including number carried, is visible to the enemy, but the number and type of Light Scouts (LS) or Heavy Scouts (HS) carried within are not visible until they are launched.

Prerequisite: TA-141 Heavy Scout Carrier, which itself requires TA-140

Development Cost: 40 MT

Item Cost: Each Fighter Bay Module costs 10 MT. The fb can carry either 2 LS or 1 HS. When fb are first installed, a parent ship must carry all LS or all HS.

When inoperable: 1 Fighter Bay Module is destroyed with each gun destroyed on the mother ship. Empty modules are destroyed first. However, a mother ship would engage in combat only after jettisoning the modules. Fighter Bay Modules are retrievable, but the mother ship must have at least 3 guns remaining for each module retrieved.

Narrative: A Fighter Bay Module must be attached to a standard (page 88) warship of 6 guns or larger. 1 module is attached for every 3 guns on a warship. Examples: A 6-gun warship can carry 2 modules, a 9-gun warship 3 modules, etc. A full complement of modules must be carried, i.e., a 12-gun warship must carry 4 modules; it cannot carry fewer.

There is no launch time; the LS or HS departs its mother ship in any direction, at any speed and at any time it wishes. Landing is similar: Simply move the LS or HS to the same location at the end of a battle board move as the CVL and consider the LS or HS landed.

The HS and LS have unlimited maneuverability capability in that they can make right-angle turns or reverse course at will without attention paid to the number of engines required to do so. Obviously, altering course or speed is not possible if the engines have been destroyed.

The mother ship may not jettison the modules until the LS or HS has been launched and may not retrieve a scout until the module is retrieved. The modules may be jettisoned in the same battle board move as the scouts are launched. The modules are normally left in the same battle board square in which the parent ship warped in, in which case, the modules don't move. If the modules are jettisoned while the parent ship is moving, the modules continue to move in the same speed and direction of the parent ship at the moment of jettisoning, which can make them impossible to retrieve, unless the parent ship was travelling at less than maximum speed.

One gun fired at a clump of Fighter Bay Modules destroys them all.

TA-143 Fighter Bay Modules for Merchants

Descriptive: The Fighter Bay Modules for Merchants are self-contained hangars that can be attached to the sides of a large merchant ship. The modules can carry either the Light Scout (LS) or the Heavy Scout (HS). This TA is a repeat of TA-141, except that the fb is modified slightly so that it can be attached to a large merchant ship.

Designation: fb1, fb2, fb3, etc., the digit representing the number of fb attached to the merchant as in 8/A.5fb4 or 6/D.13ad|rd|md|fb1. The designation, including number carried, is visible to the enemy, but the number and type of Light Scouts (LS) or Heavy Scouts (HS) carried within are not visible until they are launched.

Prerequisite: TA-142 Heavy Scout Carrier, which itself requires TAs 141 and 140.

Development Cost: 4 MT

Item Cost: Each Fighter Bay Module costs 10 MT. The fb can carry either 2 LS or 1 HS. When fb are first installed, a parent ship must carry all LS or all HS.

When inoperable: When the mother ship is destroyed.

Narrative: A Fighter Bay Module must be attached to a standard (page 65) merchant ship of 4 GU carrying capacity or larger. It cannot be carried by the D or E Class cargo ships. 1 module is attached for every 4 GU capacity of the merchant. Examples: A 4-GU merchant can carry 1 module, a 16-GU merchant 4 modules, etc. A full complement of modules must be carried, i.e., a 16-GU merchant must carry 4 modules; it cannot carry fewer.

Other operational details of the fb for merchants are identical to the TA-142 fb.

TA-146 Archaeology Retrieval Craft – White

Descriptive: The Archaeology Retrieval Craft – White is used to dig up remains of long-lost civilizations on White Dwarf stars and sift for valuable TAs that may be buried in the dust and sand of time, the hot lava of a recent geological catastrophe or the detritus of war.

Designation: ARW as in 4/ARW.23, 6/ARW.70, 8/ARW.102, etc.

Prerequisite: None

Development Cost: 8 MT Must be redeveloped for each ARW built.

Item Cost: Same as a E Class Cargo Ship (page 87). Only 1 per empire may be built at a time. A second ARW cannot be built until the first is lost or junked.

When inoperable: When destroyed or captured.

Narrative: The ARW travels to White Dwarf stars to hunt for TAs. Only White Dwarfs along the 10 row (map coordinate) have lost civilizations. After spending one full Cycom landed on the eastern planet of value (page 74), the ARW must travel back to the home star. The following Cycom the lowest even-numbered TA not yet developed by your empire becomes available. TA-34 Homo Superior – Age of Enlightenment *cannot* be discovered by an ARW. The free TA may not be used until prerequisites are developed. A White Dwarf never runs out of TAs and simultaneously may host competing ARW teams.

- Cycom 1, ARW warps into White Dwarf and lands on eastern planet of value.
- Cycom 2, ARW remains landed on eastern planet of value.
- Cycom 3, ARW warps out and heads for home.
- Cycom 4, ARW arrives at home star (or sits in deep space for a few Cycoms).
- Cycom 5, lowest even-numbered TA not yet developed by your empire becomes

available. The free TA may not be used until prerequisites are developed.

An ARW has no guns and may not carry any TAs.

The ARW behaves like a merchant ship in that it will automatically surrender to any enemy warship carrying 1 or more guns and of equal or superior speed that succeeds in closing within gun range 10. This applies only if the ARW is unprotected on the battle board by any friendly ship able and willing to attack the enemy.

TA-147 Archaeology Retrieval Craft – Red

Descriptive: The Archaeology Retrieval Craft – White is used to dig up remains of long-lost civilizations on Red Dwarf stars and sift for valuable TAs that may be buried in the dust and sand of time, the hot lava of a recent geological catastrophe or the detritus of war.

Designation: ARR as in 4/ARR.23, 6/ARR.70, 8/ARR.102, etc.

Prerequisite: None

Development Cost: 8 MT Must be redeveloped for each ARR built.

Item Cost: Same as a E Class Cargo Ship (page 87). Only 1 per empire may be built at a time. A second ARR cannot be built until the first is lost or junked.

When inoperable: When destroyed or captured.

Narrative: The ARR travels to Red Dwarf stars to hunt for TAs. Only Red Dwarfs along the 11 row (map coordinate) have lost civilizations. The ARR provides the lowest odd-numbered TA not yet developed by your empire. TA-33 Homo Inferior – Jihad Theocracy *cannot* be discovered by an ARR.

All other operational characteristics of the ARR are identical to that of the TA-146 ARW.

TA-150 Repair Ship

Descriptive: The Repair Ship repairs damaged or hulked ships.

Designation: RS as in 4/RS.23ad|rd|md|hd

Prerequisite: None

Development Cost: 30 MT

Item Cost: Same as a D Class Cargo Ship (see page 87).

When inoperable: With any damage. Must repair itself before it can repair others.

Narrative: An RS can repair 1 ship per year, regardless of size. Cost and methodology of repairs are described on page 92, which see. Repairs may be done at a star (planet of value) or in deep space. An RS can repair itself, even if hulked. All TAs are also repaired. Expendable ordnance is not restocked.

If at a star, neither the RS nor the ship under repair can move or use guns/defense or offensive TAs. Defensive TAs such as Group III TAs Deflectors may be used.

A ship undergoing repairs may be destroyed by common explosives set by the RS because the crew is assumed on board the RS.

The RS behaves like a merchant ship in that it will automatically surrender to any enemy warship carrying one or more guns and of equal or superior speed that succeeds in closing within gun range 10. This applies only if the defenseless ship is unprotected on the battle board by any friendly ship able and willing to attack the enemy.

TA-151 Repair/TA-Upgrade Ship

Descriptive: The Repair/TA-Upgrade Ship repairs damaged or hulked ships. More importantly, it is also capable of upgrading all TAs on a ship to the latest mark.

Designation: RSH as in 8/RSH.24ad|rd|md|hd

Prerequisite: TA-150 Repair Ship

Development Cost: 70 MT

Item Cost: Same as a B Class Cargo Ship (see page 87).

When inoperable: With any damage. Must repair itself before it can repair others or upgrade TAs.

Narrative: Same as the TA-150 Repair Ship except that the RSH also upgrades all TAs on a ship to the latest mark. Upgrading TAs is free, except that the cost *difference*, if any, between the old mark of TA and the new mark must be paid from an empire's IMLO Bank account. The old TA, such as a deflector or torpedo installation, is destroyed by upgrading and its value is lost.

A ship must warp into and out of the location of an RSH, after which all TAs are considered upgraded to the latest mark, unless remaining with an earlier mark is desired. No stopping time is required.

Otherwise same as TA-150 Repair Ship.

TA-155 Stores Replenishment Ship

Descriptive: The Stores Replenishment Ship resupplies a warship with expendable ordnance, such as torpedoes.

Designation: SRS as in 4/SRS.23ad|rd|md|hd, 6/SRS.70, etc.

Prerequisite: None

Development Cost: 8 MT

Item Cost: Same as a C Class Cargo Ship (see page 87).

When inoperable: When destroyed.

Narrative: An SRS can restock 1 ship per year with expendable ordnance, regardless of size ship and amount of ordnance required. The ship being restocked merely warps in and out of the deep space location of the SRS to complete the restocking. The ordnance supplies are free and are included in the initial cost of the ship. The SRS never needs to be restocked during the course of the game. The resupply evolution must be done in deep space.

An SRS has no guns. It may carry Group III Deflector TAs.

The SRS behaves like a merchant ship in that it will automatically surrender to any enemy warship carrying 1 or more guns and of equal or superior speed that succeeds in closing within gun range 10. This applies only if the SRS is unprotected on the battle board by any friendly ship able and willing to attack the enemy.

TA-160 Goodie Unit Factory Facility

Descriptive: The Goodie Unit Factory Facility manufactures Goodie Units.

Designation: GUFF as in 6/GUFF.2, 8/GUFF.11, etc.

Prerequisite: TA-150 Repair Ship

Development Cost: 20 MT

Item Cost: Same as a C Class Cargo Ship plus 10% (see page 87).

When inoperable: When destroyed. Must be at a colonized 1-MT/year star to work.

Narrative: A GUFF can manufacture 1 Goodie Unit (GU) per year, or 4 GU per Cycom. MT are routed to the ship to pay for the GU. Other merchant ships can load GU from the GUFF. The GUFF can never have more than 4 GU stored.

The GUFF must spend a full Cycom in deep space to receive MT and manufacture GU. The ship is free to colonize stars the next Cycom as would a normal C Class merchant.

The GUFF can run away from danger, even if it is involved in GU manufacture. Any stored GU travel with the GUFF. The GUFF is able to colonize Main Sequence stars.

The GUFF behaves like a merchant ship in that it will automatically surrender to any enemy warship carrying 1 or more guns and of equal or superior speed that succeeds in closing within gun range 10. This applies only if the defenseless ship is unprotected on the battle board by any friendly ship able and willing to attack the enemy.

TA-170 Tow Ship

Descriptive: The Tow Ship is a smallish ship with a powerful warp drive that can drag around hulked, damaged or undamaged ships up to and including the Star Cruiser (S) of 9 guns (page 88) and the Charlie Cargo Ship (page 87). The Tow Ship uses a powerful but very short-range tractor beam that locks another ship to its side.

Designation: TS as in 4/TS.12, 4/TS.2, 4/TS.77ad|rd|md|hd, etc.

Prerequisite: TA-70 Mark I Tractor Beam (page 120)

Development Cost: 20 MT

Item Cost: 50 MT

When inoperable: When destroyed.

Narrative: Tow Ships are designed for towing of disabled ships, of TA-171 Unpowered Cargo Barges or of TA-190 Heliostatic Hellfire Machines. A ship under tow cannot use any of its weapons remaining while under tow. The TS always moves at speed 4 unless a slower speed is temporarily required.

A Tow Ship moves to the same battle board square as the ship to be towed, spends one battle board move traveling with the ship to be towed, and then moving away with the towed ship. The TS uses its own warp drive engines to take along the towed ship. The towed ship may be detached at any time, even in mid-battle board move. The detached ship will continue to travel on the battle board at the speed and in the direction it was traveling when it was dropped. An enemy ship must be hulked before it can be towed. Note that a ship requiring a tow must be moving at speed 4 or less on the Battle Board.

The Tow Ship has no guns. The TAs a TS can mount are limited to Group III Deflectors.

The TS behaves like a merchant ship in that it will automatically surrender to any enemy warship carrying 1 or more guns and of equal or superior speed that succeeds in closing within gun range 10. This applies only if the defenseless ship is unprotected on the battle board by any friendly ship able and willing to attack the enemy.

TA-171 Unpowered Cargo Barge

Descriptive: The Unpowered Cargo Barge is strictly a life-support ship hull that is used to transport GU.

Designation: UCB as in UCB.1, UCB.2, etc.

Prerequisite: TA-170 Tow Ships

Development Cost: 4 MT

Item Cost: 50 MT

When inoperable: When destroyed.

Narrative: The UCB can accomodate 16 GU. These GU can be unloaded with no time delay onto a powered merchant ship (page 87). The merchant ship can then use the GU. The UCB does not need the presence of a powered merchant ship to *load* GU at a production center star or at a TA-160 Goodie Unit Factory Facility (GUFF).

The UCB can be destroyed or abandoned at will if it is empty. It cannot be destroyed if it has cargo on board, which includes the firebrand priests that make GUs so effective. The UCB can carry *only* GUs as cargo.

The UCB cannot carry TAs, it has no weapons or defense and is unpowered. Any deflector TAs carried by the TS also protect the UCB.

TA-180 Plasma Gun Warship

Descriptive: The Plasma Gun Warship mounts a different type of gun than all other warships. Traditional guns are inter-dimensional anti-matter weapons that generate exploding energy balls in the vicinity of an enemy ship. The Plasma Gun hurls superhot plasma down a warship-generated “octoconjunctional unreality seam” that acts as a no-time-of-arrival delivery system.

Designation: ^P as in 6/Z^P.20, 8/S^P.45, 4/DN^P.23, etc., (the superscript ^P indicates the ship mounts Plasma Guns instead of the normal gun). The ^P is *not* visible to the enemy.

Prerequisite: None for 9-gunner and smaller or TA-110.10 through TA-110.16 as needed. Must be on warship with 5 to 16 guns.

Development Cost: 100 MT

Item Cost: Plasma Gun Warships cost the same as the traditional warships (page 88).

When inoperable: When ship is hulked or destroyed.

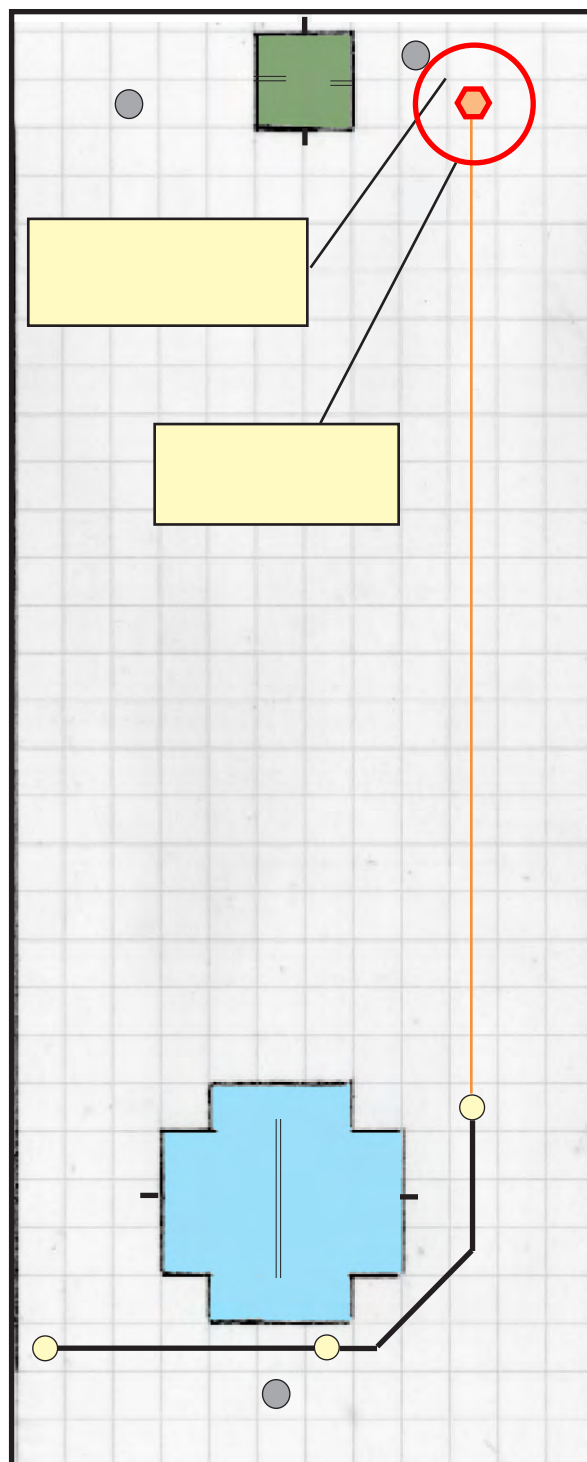
Narrative: The Plasma Gun Warship fires plasma along any of the 8 directions on the battle board. The plasma explodes when it comes within 1 square of any celestial object, such as a planet, moon or ring. It also explodes next to TA-340 series of Asteroid Torpedo (page 181) or when within 1 square of a ship in pre-warp, which then serves to knock that ship out of pre-warp.

The Plasma Gun has a range of 38 on the diagonals (NE, SE, SW, NW) and 39 along the cardinal points (N, S, E, W).

The attack factor of the gun is twice the number of guns carried. Example: A 14-gun Super Dreadnought (Z^P) fires 10 of its 14 guns, which yields an attack factor of 20. The remaining 4 defense is *not* doubled. The defensive bonus for speed (page 89) is added as needed.

Other ships cannot be upgraded to a Plasma Gun Warship, nor may a Plasma Gun Warship be upgraded outside its type.

A Plasma Gun Warship may carry any TAs appropriate for a ship of this size.



TA-190a, b, c Marks I, II, III Heliostatic Hellfire Machine

Descriptive: The Heliostatic Hellfire Machine uses a system of mirrors to focus the sun's electromagnetic emissions, the planet of value's magnetic field and electricity generated by the forces of entropy into a fearsome bolt of hellfire. The fragile contraption is best used in conjunction with conventional forces because it is easily destroyed.

Designation: H, HH or HHH as in 4/H.12, 4/HH.85, 4/HHH.6, etc.

Prerequisite: None, except must be developed in sequence

Development Cost: Mark I 60 MT, Mark II 20 MT, Mark III 8 MT

Item Cost: Mark I 50 MT, Mark II 75 MT, Mark III 100 MT

When inoperable: Each gun fired at the H, HH or HHH destroys 1 square of potential hellfire blast pattern. The next gun fired hulks the H and another gun destroys it. So the H can take 9 hits before it is inoperable, the HH 16 hits and the HHH 25 hits. Long guns fired on overload and short guns that have double power each count as 1 gun. The same rule applies to TA-180 Plasma Gun Warship (page 142). Each torpedo blast (only those with an explosion) is equivalent to 3 gun hits. The H, HH or HHH do not work at a Dead Dwarf Star.

Narrative: The H must be built at a production center star (but not a Dead Dwarf), where it remains in orbit around a moon, moonlet or planet. The H may be towed by a TA-170 Tow Ship. If the H arrives at a star by Tow Ship, the H becomes operational the moment it is towed to a position next to a moon, moonlet or planet.

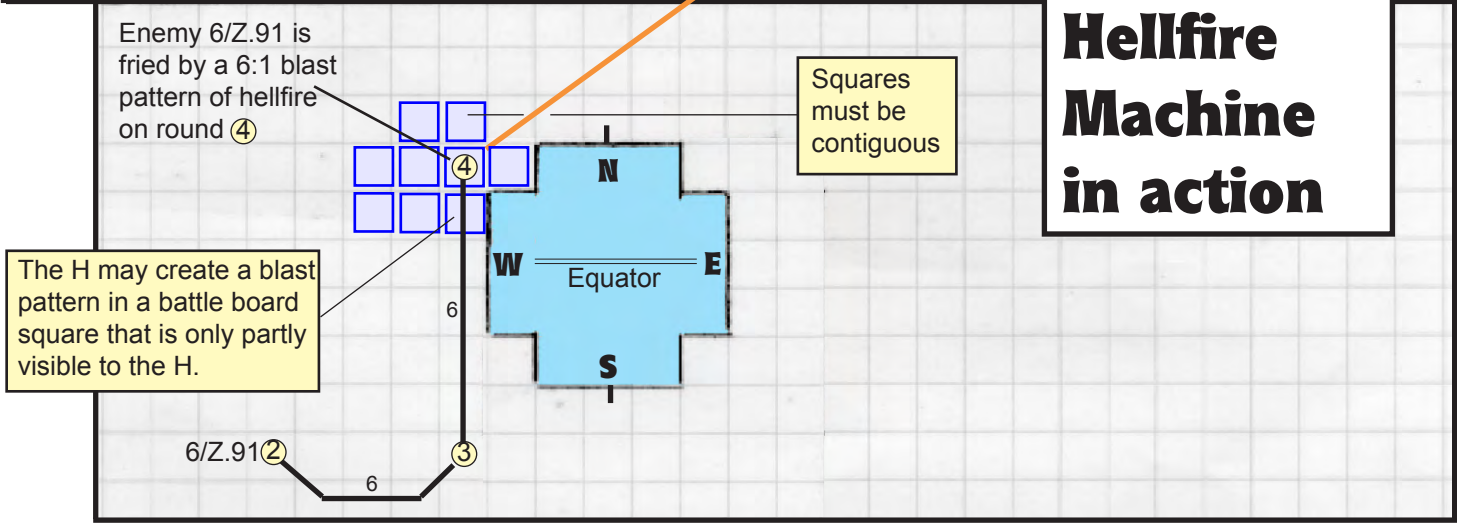
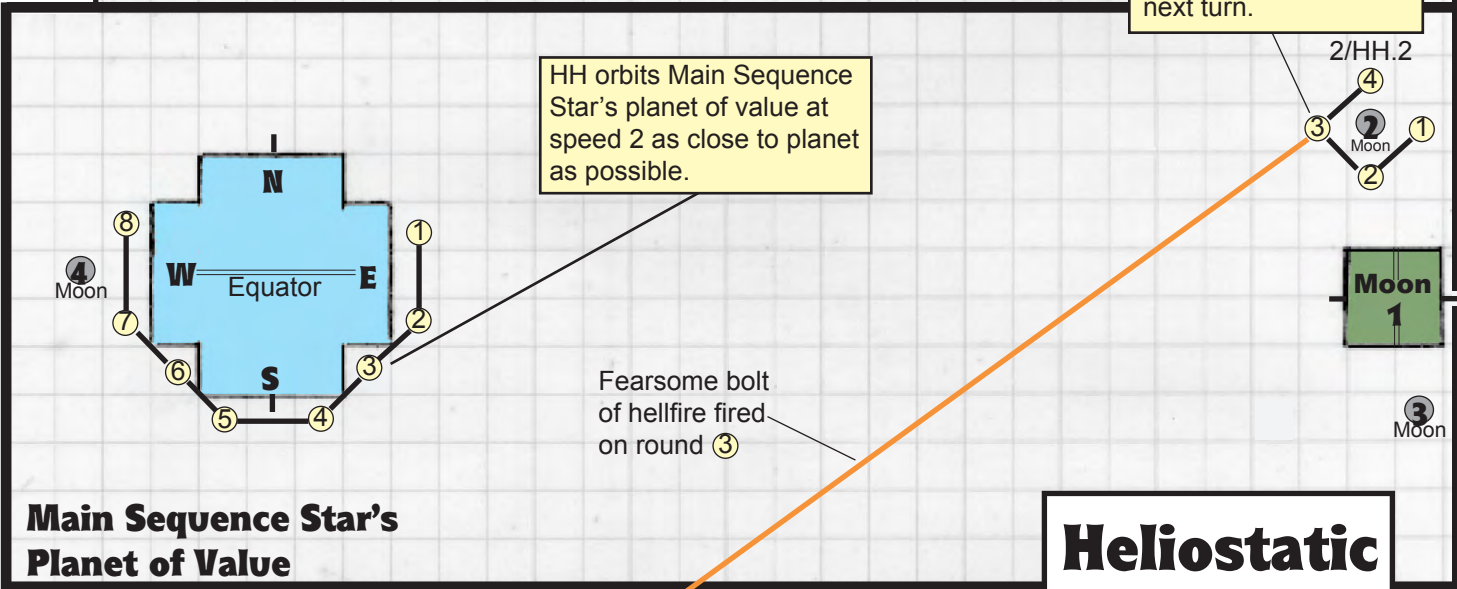
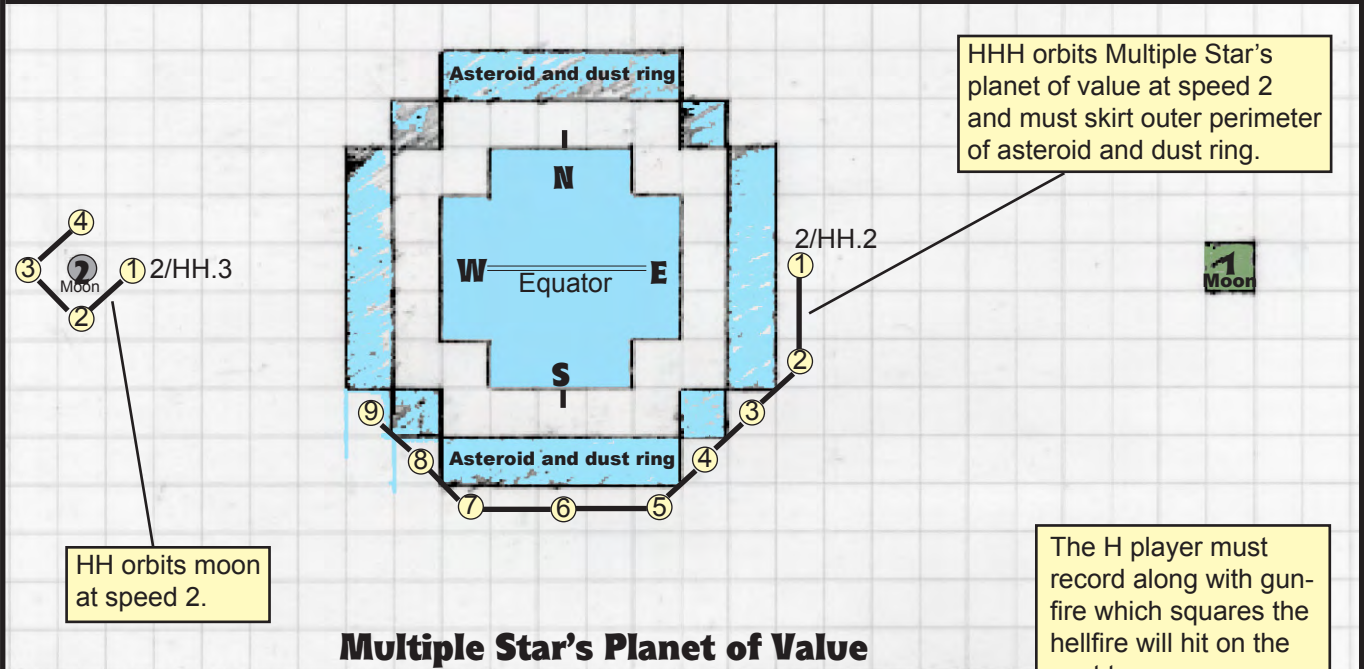
The H has no warp drive, has no traditional guns or defense and cannot carry TAs. The H has no engines. It travels along a tight, orbital path in a clockwise direction around a moon or planet as shown on page 144.

The H orbits at speed 2 at a distance of 1 *square* away from a moon, moonlet, planet or asteroid belt. Initial placement for a battle is always to the east (a second around a planet of value starts at the west). An opposing fleet warping in will always be placed approximately 50 from any ships already on the battle board and no closer than 50 to any H on the battle board. Only 1 H may orbit a moon or moonlet; as many as 2 may orbit a planet (180 degrees apart, starting east and west).

The H's hellfire has a range of 1 to 40 and an attack factor of 6:1 regardless of the size of the target. It fires once per battle board turn and the blast occurs the following battle board move. If the target is protected by TA-201 Heat Deflector the attack factor is cut to 3:1. The hellfire blast pattern for the Mark I H is any 9 (or fewer) contiguous squares on the battle board. The blast pattern for the Mark II HH is 16 and for the Mark III HHH is 25. These 9 squares can be in any shape as long as each hellfire blast square is joined on a side by another hellfire blast square.

The H fires simultaneously with guns. The H player must indicate which squares are being attacked. Damage is not scored until the target makes its next move, which may or may not bring it to destruction. Damage is scored along with other damage. It must be possible to draw a straight line (use a ruler) from the Hellfire Machine to all squares of the blast pattern. Blast pattern squares only partially exposed can be hit; see illustration on next page.

Two H machines may cooperate against one target. The cooperative blast patterns can be adjacent, doubled up or partly doubled up. A target of any size or type is destroyed if it moves into a doubled up blast pattern.



TA-192 Mark I Moon Fortress

Descriptive: A Moon Fortress is a land mounted gun emplacement sited on one or more of the moons orbiting the planet of value of a production center star, but not a Dead Dwarf.

Designation: MF8 as in MF8.1, MF8.2, MF8.3 or MF8.4 (the 8 is the number of guns and the .1, .2, .3 and .4 indicate the moon on which it is emplaced).

Prerequisite: None

Development Cost: 4 MT

Item Cost: 30 MT

When inoperable: When destroyed by gunfire

Narrative: The Mark I Moon Fortress is always emplaced on 1 or more of the moons orbiting the planet of value at a production center star or a home star. It cannot be at a Dead Dwarf production center star. Built on year 1 of a Cycom, like a ship, and available on year 1 of the following Cycom, like a ship.

The Mark I always has 8 guns. The only TA the Moon Fortress may carry is TA-44, 45 or 46 Range finder (page 117), which adds 10% to the cost of the MF. No weapon except ship-borne guns can attack it. No more than 1 can be located on a moon. It can fire to range 40 in any direction off a moon of any size. Its location and size are immediately visible to any ship warping onto the battle board. Ships will not warp in closer than range 48 from a Moon Fortress.

The planet of value cannot be attacked until all Moon Fortresses have been destroyed. A Moon Fortress is automatically repaired at no cost from one year to the next.

No special equipment is required to emplace it on a moon; planetary shuttle craft are always assumed to be available.

TA-193 Mark II Moon Fortress

Descriptive: Same as the Mark I.

Designation: MF16 as in MF16.1, MF16.2, MF16.3 or MF16.4 (the 16 is the number of guns and the .1, .2, .3 and .4 indicate the moon on which it is emplaced).

Prerequisite: TA-110.10 through TA-110.16 Big Warships (page 131).

Development Cost: 4 MT

Item Cost: 70 MT

When inoperable: When destroyed by gunfire

Narrative: The Mark II is the same as the Mark I except that it has 16 guns. The Mark I can be upgraded to the Mark II by paying the cost difference. Upgrading consumes no time.

TA-194 Mark III Moon Fortress

Descriptive: Same as the Mark I.

Designation: MF24 as in MF24.1, MF24.2, MF24.3 or MF24.4 (the 24 is the number of guns and the .1, .2, .3 and .4 indicate the moon on which it is emplaced).

Prerequisite: TA-110.10 through TA-110.24 Big Warships (page 131).

Development Cost: 4 MT

Item Cost: 120 MT

When inoperable: When destroyed by gunfire

Narrative: The Mark III is the same as the Mark II except that it has 24 guns. Upgrade procedure is the same as for the Mark II. Can be upgraded directly from either earlier mark.

TA-195 Mark IV Moon Fortress

Descriptive: Same as the Mark I.

Designation: MF as in MF32.1, MF32.2, MF32.3 or MF32.4 (the 32 is the number of guns and the .1, .2, .3 and .4 indicate the moon on which it is emplaced).

Prerequisite: TA-110.10 through TA-110.32 Big Warships (page 131).

Development Cost: 4 MT

Item Cost: 180 MT

When inoperable: When destroyed by gunfire

Narrative: The Mark IV is the same as the Mark III except that it has 32 guns. Upgrade procedure is the same as for the Mark II. Can be upgraded directly from any earlier mark.

TA-196 Armored Warships – TAs

TA-197 Armored Warships – Speed

TA-198 Armored Warships – Hull

TA-199 Armored Warships – Guns

Descriptive: An Armored Warship carries enhanced defensive shields and unbelievably strong armor to protect the ship's vitals and hull integrity. TA-199 is especially powerful.

Designation: ^{AT}, ^{AS}, ^{AH} or ^{AG} as in 6/DR^{AH}.10, 10/M^{AG}.92, a7/S^{AT}.23ad|rd|td|ti, etc. The ^A designations are *not* visible to the enemy.

Prerequisite: None.

Development Cost: 90 MT for the first of the 4 to be developed and 8 MT for any of the subsequent 3. Can be developed in any sequence.

Item Cost: TAs – Adds 10% to base cost of ship. 6-gun ships and larger, page 88 only.

Speed – Adds 20% to base cost of ship. 6-gun ships and larger, page 88 only.

Hull – Adds 20% to base cost of ship. 8-gun ships and larger, p. 88 only.

Guns – Adds 50% to base cost of ship. 8-gun ships and larger, page 88 only.

An Armored Warship may carry any combination of these TAs except that TA-199 to protect guns cannot be mounted in conjunction with the others. Percentage added to base cost is calculated *before* any reduction earned with TAs 20 and 21 Mass Production (p. 111). These TAs cannot be mounted on a TA-117 Raider or TA-118 Double Gun Warship (both page 131).

When inoperable: When ship is destroyed.

Narrative: Each of these TAs provides 100% protection for the armored portions of a ship against destruction by enemy guns or torpedoes of any type when the ship is hit by an attack of 5:1 or weaker (Hits Table, page 90). Any hit that strikes an armored portion of the target ship is counted as a miss. Odds of 6:1 or greater will punch through the target's defenses and be scored normally.

Especially note that TA-199 Armored Warships – Guns may not be mounted on a ship with any of the other 3 armored TAs. Some or all of the other 3 may be combined on 1 ship.

Chapter 11



Group III Deflectors



Group III – Deflectors

TA-200 Asteroid Deflector – ad – 90 MT
 TA-201 Radiation Deflector – rd – 60 MT
 TA-202 Heat Deflector – hd – 4 MT
 TA-203 Magnetism Deflector – md – 8 MT
 TA-204
 TA-205
 TA-206
 TA-207
 TA-208
 TA-209
 TA-210 Super Deflector – sd – 4 MT
 TA-211
 TA-212
 TA-213
 TA-214
 TA-215
 TA-216
 TA-217
 TA-218
 TA-219
 TA-220 Mark I Torpedo Deflector – td – 50 MT
 TA-221 Mark II Torpedo Deflector – td^2 – 50 MT
 TA-222 Mark III Torpedo Deflector – td^3 – 50 MT
 TA-223 Mark I Torpedo Interceptor – ti – 50 MT
 TA-224 Mark II Torpedo Interceptor – ti^2 – 50 MT
 TA-225 Mark III Torpedo Interceptor – ti^3 – 50 MT
 TA-226 Torpedo Deflector/Interceptor – tdi – 50 MT
 TA-227
 TA-228
 TA-229
 TA-230 Universal Deflector – ud – 4 MT
 TA-231 Negative Torpedo Negator – tn – 50 MT
 TA-232
 TA-233
 TA-234
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TA-299

TA-200 Asteroid Deflector

Descriptive: The inexpensive to install Asteroid Deflector fends off the asteroids found at Protostars and T Tauri stars. This TA should be developed early in a game.

Designation: ad as in 4/Z.12ad, 10/TS.85ad, 8/S.6ad, etc.

Prerequisite: None

Development Cost: 90 MT

Item Cost: 2 MT – May be mounted on any ship

When inoperable: When destroyed as per damage charts on page 90

Narrative: The Asteroid Deflector protects only the ship mounting it from asteroids. That includes 100% protection against TA-350 series of Asteroid Torpedoes. It also protects anything under tow by a TA-170 Tow Ship. It cannot be removed, except to be replaced by TA-210 Super Deflector.

TA-201 Radiation Deflector

Descriptive: The inexpensive to install Radiation Deflector fends off the excessive radiation (gamma rays, etc.) found at Neutron Stars, Pulsars, Variable Stars, Giant Stars and Supergiant Stars. This is an *extremely high-priority* TA needed to develop TA-100 Warp Juice Mining Module.

Designation: rd as in 4/Z.12rd, 10/TS.85rd, 8/S.6rd, etc.

Prerequisite: None

Development Cost: 60 MT

Item Cost: 2 MT – May be mounted on any ship

When inoperable: When destroyed as per damage charts on page 90

Narrative: Radiation Deflector protects only the ship mounting it from radiation. It also protects anything under tow by a TA-170 Tow Ship. It cannot be removed, except to be replaced by TA-210 Super Deflector.

TA-202 Heat Deflector

Descriptive: The inexpensive Heat Deflector insulates a ship against the heat found near Protostars and Supergiant Stars. This TA should be developed early in a game.

Designation: hd as in 4/Z.12hd, 10/TS.85hd, 8/S.6hd, etc.

Prerequisite: None

Development Cost: 4 MT

Item Cost: 2 MT – May be mounted on any ship

When inoperable: When destroyed as per damage charts on page 90

Narrative: The Heat Deflector protects only the ship mounting it from excessive radiant heat. It also protects anything under tow by a TA-170 Tow Ship. It cannot be removed, except to be replaced by TA-210 Super Deflector.

TA-203 Magnetism Deflector

Descriptive: The inexpensive Magnetism Deflector degausses the magnetism found at Pulsars and Neutron Stars. This is an *extremely high-priority* TA needed to develop TA-100 Warp Juice Mining Module.

Designation: md as in 4/Z.12md, 10/TS.85md, 8/S+.6md, etc.

Prerequisite: None

Development Cost: 8 MT

Item Cost: 2 MT – May be mounted on any ship

When inoperable: When destroyed as per damage charts on page 90

Narrative: The Magnetism Deflector protects only the ship mounting it from magnetism. It also protects anything under tow by a TA-170 Tow Ship. It cannot be removed, except to be replaced by TA-210 Super Deflector.

TA-210 Super Deflector

Descriptive: The inexpensive Super Deflector protects a ship from asteroids, radiation, heat and magnetism. This is a useful TA that should be developed early in a game.

Designation: sd as in 4/Z.12sd, 10/CB.85sd, c8/S+.6sd, etc.

Prerequisite: TA-200 Asteroid Deflector, TA-201 Radiation Deflector, TA-202 Heat Deflector and TA-203 Magnetism Deflector

Development Cost: 4 MT

Item Cost: 4 MT – May be mounted on any ship

When inoperable: When destroyed as per damage charts on page 90

Narrative: Provides 100% protection against asteroids, radiation, heat and magnetism by combining the capabilities of TA-200 Asteroid Deflector, TA-201 Radiation Deflector, TA-202 Heat Deflector (all on page 151) and TA-203 Magnetism Deflector (above).

TA-220 Mark I Torpedo Deflector

Descriptive: The Torpedo Deflector is partially effective in protecting a ship against the blast effects of any Group IV Torpedo TAs.

Designation: td as in 4/Z.12td, 10/CB.85td, c8/S+.6td, etc.

Prerequisite: None

Development Cost: 50 MT

Item Cost: 4 MT – May be mounted on any ship that has 3 or more guns (long or short)

When inoperable: When destroyed as per damage charts on page 90

Narrative: The Torpedo Deflector protects only the ship mounting it from 33% (one-third, rounded off to nearest whole number) of the blast effect from these Group IV TA weapons listed below:

- TA-300 series of Unguided Torpedoes
- TA-310 series of Phyton Torpedoes
- TA-320 series of Homing Torpedoes
- TA-330 series of Toss Torpedoes
- TA-350 series of Meandering Medusa
- TA-360 series of Super Meandering Medusa, excluding Asteroid Torpedo.

TA-221 Mark II Torpedo Deflector

Descriptive: Same as Mark I except for increased cost and effectiveness.

Designation: td² as in 8/CS.12td², 10/CB.85td², 6/BB.13td², etc.

Prerequisite: TA-220 Mark I Torpedo Deflector

Development Cost: 50 MT

Item Cost: 7 MT – May be mounted on any ship that has 3 or more guns (long or short)

When inoperable: When destroyed as per damage charts on page 90.

Narrative: Identical to the Mark I except that the blast effect is cut by 50% (one-half, rounded off to nearest whole number).

TA-222 Mark III Torpedo Deflector

Descriptive: Same as Mark II except for increased cost and effectiveness.

Designation: td³ as in 8/CS.12td³, 10/CB.85td³, 6/BB.13td³, etc.

Prerequisite: TA-221 Mark II Torpedo Deflector

Development Cost: 50 MT

Item Cost: 10 MT – May be mounted on any ship that has 3 or more guns (long or short)

When inoperable: When destroyed as per damage charts on page 90.

Narrative: Identical to the Mark II except that the blast effect is cut by 67% (two-thirds, rounded off to nearest whole number).

TA-223 Mark I Torpedo Interceptor

Descriptive: The Torpedo Interceptor is partially effective against certain types of torpedoes and is used as a supplement to the TA-220 series of Torpedo Deflectors.

Designation: ti as in 8/CS.12ti, 10/CB.85ti, 6/D.13ti, etc.

Prerequisite: None

Development Cost: 50 MT

Item Cost: 4 MT – May be mounted on any ship, including merchants

When inoperable: When destroyed as per damage charts on page 90. Ineffective against TAs 304-305 Marks V and VI Unguided Torpedoes and TAs 333-334 Marks V and VI Toss Torpedoes.

Narrative: The Torpedo Interceptor tosses an “object” to a range of 2 on the battle board, which serves to explode incoming torpedoes of the following types:

- TA-300 series of Unguided Torpedoes, except Marks V and VI
- TA-310 series of Phyton Torpedoes
- TA-320 series of Homing Torpedoes, except the Mark VI
- TA-330 series of Toss Torpedoes, except Marks V and VI
- TA-360 series of Super Meandering Medusa; only those patterned on those above.
- TA-380 series of Confusion Torpedo
- TA-390 series of Dislocation Torpedo, except the Mark IV
- TA-403/404/405 Marks IV/V/VI White Hole Torpedo
- TA-410 series of Time Stasis Torpedo

The ti can fire any number of times and is fired simultaneously with torpedoes. A roll of a 6-sided die determines if the ti was effective:

- 1, 2 – ti effective
- 3, 4, 5, 6 – ti fails

TA-224 Mark II Torpedo Interceptor

Descriptive: Same as Mark I except for increased cost and effectiveness.

Designation: ti² as in 8/CS.12ti², 10/CB.85ti², 6/BB.13ti², etc.

Prerequisite: TA-223 Mark I Torpedo Interceptor

Development Cost: 50 MT

Item Cost: 7 MT – May be mounted on any ship, including merchants

When inoperable: Same as Mark I

Narrative: Identical to the Mark I except that the effectiveness is increased to 50%, which is determined by the roll of a 6-side die:

- 1, 2, 3 – ti effective
- 4, 5, 6 – ti fails

TA-225 Mark III Torpedo Interceptor

Descriptive: Same as Mark II except for increased cost and effectiveness.

Designation: ti³ as in 8/CS.12ti³, 10/CB.85ti³, 6/BB.13ti³, etc.

Prerequisite: TA-224 Mark II Torpedo Interceptor

Development Cost: 50 MT

Item Cost: 10 MT – May be mounted on any ship, including merchants

When inoperable: Same as Mark I

Narrative: Identical to the Mark II except that the effectiveness is increased to 67%, which is determined by the roll of a 6-side die:

- 1, 2, 3, 4 – ti effective
- 5, 6 – ti fails

TA-226 Torpedo Deflector/Interceptor

Descriptive: The Torpedo Deflector/Interceptor is reasonably effective against certain types of torpedoes. Cost is reduced from mounting the two deflectors separately.

Designation: tdi as in 8/CS.12tdi, 10/CB.85tdi, 6/D.13tdi, etc.

Prerequisite: TA-222 Mark III Torpedo Deflector and TA-225 Mark III Torpedo Interceptor

Development Cost: 50 MT

Item Cost: 12 MT – May be mounted on a warship with 3 or more guns

When inoperable: When destroyed as per damage charts on page 90. The ti portion of the tdi is ineffective against TAs 304-305 Marks V and VI Unguided Torpedoes and TAs 333-334 Marks V and VI Toss Torpedoes.

Narrative: The tdi offers the combined capabilities of the TA-222 Mark III Torpedo Deflector and the TA-225 Mark III Torpedo Interceptor. Briefly, a ship under attack by torpedoes uses the Mark III ti first, and if that fails, uses the Mark III td. An attacking torpedo is affected as follows:

Roll 6-side die for the ti:

- 1, 2, 3, 4 – ti effective
- 5, 6 – ti fails

If the ti fails, reduce blast effect by 67% (two-thirds) for the td. Round off to nearest whole number.

TA-230 Universal Deflector

Descriptive: The Universal Deflector protects a ship from asteroids, radiation, heat and magnetism as well as torpedoes.

Designation: ud as in 4/Z.12ud, 10/CB.85ud, c8/S.6ud, etc.

Prerequisite: TA-210 Super Deflector and TA-226 Torpedo Deflector/Interceptor

Development Cost: 4 MT

Item Cost: 16 MT – May be mounted on a warship with 3 or more guns

When inoperable: When destroyed as per damage charts on page 90. Ineffective against all marks of TA-370 Negative Energy, 380 Cowardice, 390 Dislocation, 400 White Hole and 410 Time Stasis torpedoes.

Narrative: Combines the capabilities of TA-210 Super Deflector (page 152) and TA-226 Torpedo Deflector/Interceptor (above).

TA-231 Negative Energy Torpedo Negator

Descriptive: The Negative Energy Torpedo Negator protects a ship from the effects of the TA-370 series of Negative Energy Torpedoes.

Designation: tn as in 4/Z.12tn, 10/CB.85tn, c8/S.6tn, etc.

Prerequisite: TA-372 Mark III Negative Energy Torpedo

Development Cost: 50 MT

Item Cost: 12 MT – May be mounted on a warship with 5 or more guns

When inoperable: When destroyed as per damage charts on page 90

Narrative: Provides 100% protection against the effects of the TA-370 series of Negative Energy Torpedoes. The tn cannot be removed.

Chapter 12



Group IV

Torpedoes



Group IV – Torpedoes

TA-300 Mark I Unguided Torpedo – * – 100 MT

TA-301 Mark II Unguided Torpedo – ** – 40 MT

TA-302 Mark III Unguided Torpedo – *** – 30 MT

TA-303 Mark IV Unguided Torpedo – **** – 20 MT

TA-304 Mark V Unguided Torpedo – ***** – 50 MT

TA-305 Mark VI Unguided Torpedo – ***** – 8 MT

TA-306

TA-307 Torpilleur Capability (Unguided) ***** – 4 MT

TA-308

TA-309

TA-310 Mark I Phytion Torpedo – + – 100 MT

TA-311 Mark II Phytion Torpedo – ++ – 8 MT

TA-312 Mark III Phytion Torpedo – +++ – 70 MT

TA-313 Mark IV Phytion Torpedo – ++++ – 30 MT

TA-314 Mark V Phytion Torpedo – +++++ – 8 MT

TA-315 Mark VI Phytion Torpedo – ++++++ – 30 MT

TA-316

TA-317

TA-318

TA-319

TA-320 Mark I Homing Torpedo – • – 100 MT

TA-321 Mark II Homing Torpedo – •• – 20 MT

TA-322 Mark III Homing Torpedo – ••• – 12 MT

TA-323 Mark IV Homing Torpedo – •••• – 8 MT

TA-324 Mark V Homing Torpedo – ••••• – 8 MT

TA-325 Mark VI Homing Torpedo – •••••• – 8 MT

TA-326

TA-327 Torpilleur Capability (Homing) – ••••• – 4 MT

TA-328

TA-329

TA-330 Mark I Toss Torpedo – ø – 100 MT

TA-331 Mark II Toss Torpedo – øø – 20 MT

TA-332 Mark III Toss Torpedo – øøø – 12 MT

TA-333 Mark IV Toss Torpedo – øøøø – 8 MT

TA-334 Mark V Toss Torpedo – øøøøø – 50 MT

TA-335 Mark VI Toss Torpedo – øøøøøø – 8 MT

TA-336

TA-337 Torpilleur Capability (Toss) – øøøøøø – 4 MT

TA-338

TA-339

TA-340 Mark I Asteroid Torpedo – å – 50 MT
 TA-341 Mark II Asteroid Torpedo – åå – 12 MT
 TA-342 Mark III Asteroid Torpedo – ååå – 8 MT
 TA-343 Mark IV Asteroid Torpedo – åååå – 8 MT
 TA-344 Mark V Asteroid Torpedo – ååååå – 8 MT
 TA-345 Mark VI Asteroid Torpedo – åååååå – 4 MT
 TA-346
 TA-347
 TA-348
 TA-349
 TA-350 Mark I Meandering Medusa (Missile) – Δ – 80 MT
 TA-351 Mark II Meandering Medusa (Missile) – ΔΔ – 40 MT
 TA-352 Mark III Meandering Medusa (Missile) – ΔΔΔ – 40 MT
 TA-353 Mark IV Meandering Medusa (Missile) – ΔΔΔΔ – 20 MT
 TA-354 Mark V Meandering Medusa (Missile) – ΔΔΔΔΔ – 12 MT
 TA-355 Mark VI Meandering Medusa (Missile) – ΔΔΔΔΔΔ – 8 MT
 TA-356
 TA-357
 TA-358
 TA-359
 TA-360 Super Meandering Medusa (Missile) – Δ*****, Δ+++++, Δ•••, Δøøøøø – 90 MT
 TA-361
 TA-362
 TA-363
 TA-364
 TA-365
 TA-366
 TA-367
 TA-368
 TA-369
 TA-370 Mark I Negative Energy Torpedo – ! – 100 MT
 TA-371 Mark II Negative Energy Torpedo – !! – 12 MT
 TA-372 Mark III Negative Energy Torpedo – !!! – 10 MT
 TA-373 Mark IV Negative Energy Torpedo – !!!! – 8 MT
 TA-374 Mark V Negative Energy Torpedo – !!!!! – 6 MT
 TA-375 Mark VI Negative Energy Torpedo – !!!!! – 4 MT
 TA-376 Torpilleur Capability (Negative Energy) – !!!!! – 4 MT
 TA-377
 TA-378
 TA-379
 TA-380 Mark I Confusion Torpedo – • – 50 MT
 TA-381 Mark II Confusion Torpedo – •• – 4 MT
 TA-382 Mark III Confusion Torpedo – ••• – 4 MT
 TA-383 Mark IV Confusion Torpedo – •••• – 30 MT
 TA-384

TA-385
TA-386
TA-387
TA-389
TA-390 Mark I Dislocation Torpedo – ^ – 50 MT
TA-391 Mark II Dislocation Torpedo – ^^ – 10 MT
TA-392 Mark III Dislocation Torpedo – ^^^ – 20 MT
TA-393 Mark IV Dislocation Torpedo – ^^^^ – 30 MT
TA-394
TA-395
TA-396
TA-397
TA-399 Dislocation Torpedo Shield – (^) – 50 MT
TA-400 Mark I White Hole Torpedo – x – 100 MT
TA-401 Mark II White Hole Torpedo – xx – 8 MT
TA-402 Mark III White Hole Torpedo – xxx – 40 MT
TA-403 Mark IV White Hole Torpedo – xxxx – 100 MT
TA-404 Mark V White Hole Torpedo – xxxxx – 8 MT
TA-405 Mark VI White Hole Torpedo – xxxxxx – 20 MT
TA-406
TA-407
TA-408
TA-409 White Hole Torpedo Shield – (x) – 20 MT
TA-410 Mark I Time Stasis Torpedo – † – 100 MT
TA-411 Mark II Time Stasis Torpedo – †† – 4 MT
TA-412 Mark III Time Stasis Torpedo – ††† – 4 MT
TA-413 Mark IV Time Stasis Torpedo – †††† – 8 MT
TA-414
TA-415
TA-416
TA-417
TA-418
TA-419 Time Stasis Torpedo Shield – (†) – 20 MT
TA-420
TA-421
TA-422
TA-423
TA-424
TA-425
TA-490 Torpedo Gatling (Rapid-Fire Mechanism) – tg – 50 MT

TA-300 Mark I Unguided Torpedo

Descriptive: The Mark I Unguided Torpedo uses inertial guidance to travel in a straight line toward the target. Its warhead consists of a potent mix of fusion entropy, curvilinear magnetism, ultra-high frequency gravity waves, microscopic temporal disjunctivitis and a fermented imagination. The Unguided Torpedo may be the most effective torpedo.

Designation: * (asterisk) as in 5/CA.12*, 10/CS.85*, 8/S+.6*, etc.

Prerequisite: None

Development Cost: 100 MT

Item Cost: 4 MT per torp/tube – Must be mounted on any warship with 1 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90). Empty tubes are destroyed first.

Narrative: A ship carries 1 Mark I Unguided Torpedo for each gun on the ship (TA-117 Double-Gun Warships carry 1 torpedo per long gun). The Mark I has a range of 30 and an attack factor of 10 in the 8 squares around the exact location of the torpedo blast. The torpedo has a proximity fuse and will explode the instant it comes anywhere along its course within 1 square of:

- An approaching Unguided Torpedo of any mark
- Any planet, moon, ring or radiation belt
- Any ship (enemy or friendly)
- TAs 223-226 Torpedo Interceptors (page 155)
- TA-340 series Asteroid Torpedo already in place

The torpedo must travel at least 4 movement factors before it is armed and able to explode. The torpedo's attack factor is computed against the target's total defense value after damage, if any, of previous turns and not whatever defense was assigned for that round. Added defense for speed is not used.

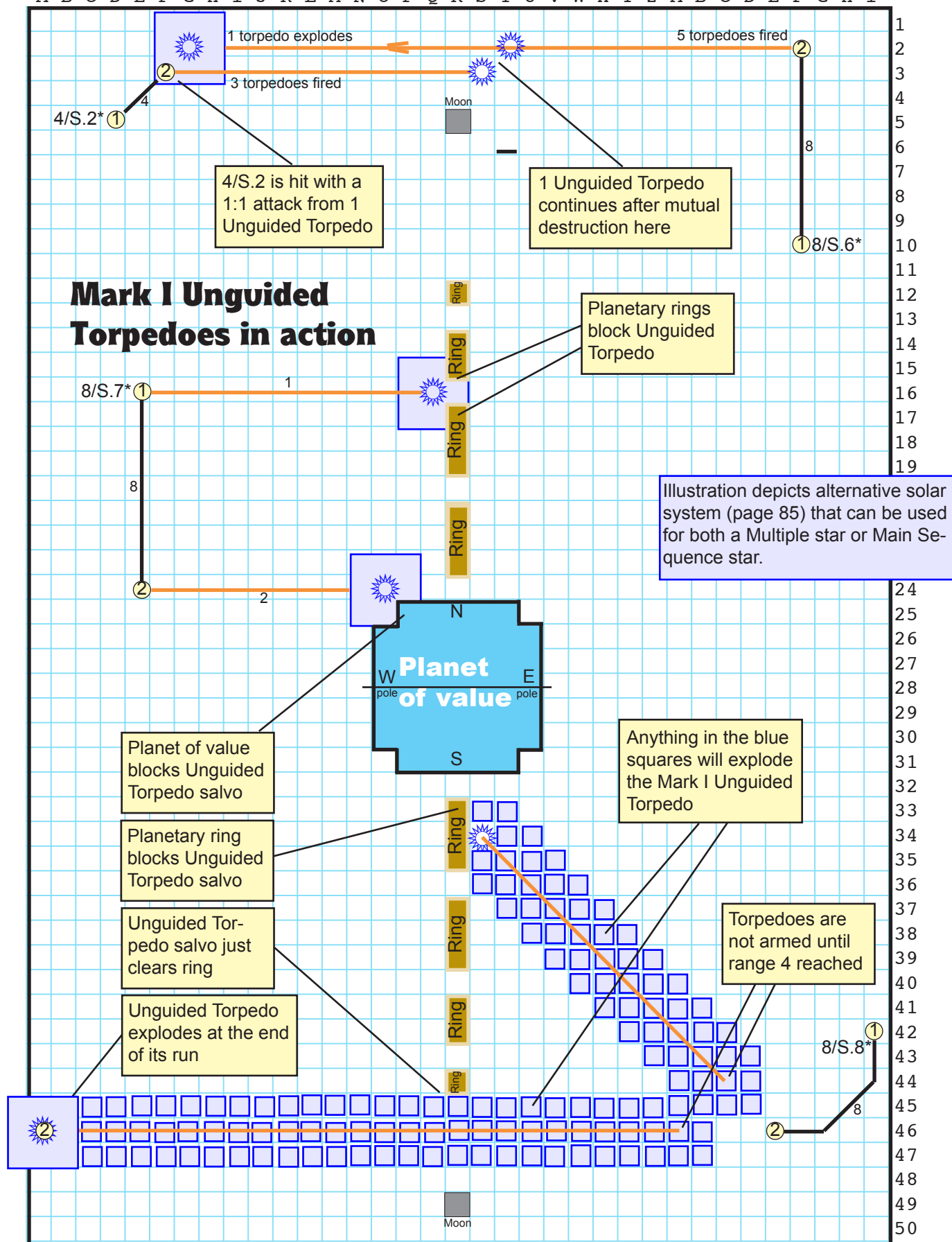
The Unguided Torpedo must travel along a straight line in any one of the 8 possible directions until it reaches its full range of 30 in its first move. The torpedo explodes when it comes within 1 square of a target or at the end of its run. The torpedo is fired after ship movement on the battle board is complete. See sequence of events chart on page 93.

A ship may fire Unguided Torpedoes at any number of targets. Any number of torpedoes may be fired from a ship at one target, all on the same track, but only one hit on the target will be scored. The target will fire its own Unguided Torpedos, if it has any, in defense. Equal numbers of opposing torpedos will cancel. The ship that fired the most torpedos will get 1 hit on its opponent. Examples: 7/CA.2* fires 6 of its complement of 8 torpedos and the opposing 5/S.3* fires 3 torpedoes, the CA will get 1 hit on the S. If the S had fired all 9 of its torpedoes, it would have gotten 1 hit on the CA. Only one torpedo scores a hit regardless of the number fired.

Torpedo reloads are available only at a friendly production center star. Each Mark I Unguided Torpedo reload is free. No time is required to reload, just warp in, warp out and consider it done. A ship cannot transfer torpedoes to another ship.

A ship may carry only one type of torpedo.

The illustration on the next page depicts how this torpedo functions.



TA-301 Mark II Unguided Torpedo

Descriptive: See TA-300 Mark I Unguided Torpedo.

Designation: * (asterisk) as in 5/CA.12**, 10/CS.85**, 8/S.6**, etc.

Prerequisite: TA-300 Mark I Unguided Torpedo

Development Cost: 40 MT

Item Cost: 4 MT per torp/tube – Must be mounted on any warship with 1 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90). Empty tubes are destroyed first.

Narrative: The operational characteristics of the Mark II are the same as the Mark I except that range is increased to 32 and the attack factor to 12. There is no automatic upgrading of existing Mark I's after the Mark II has been developed. A ship with Mark I's or earlier must warp into and out of a friendly production center star, after which the torpedoes are upgraded at no cost. No stopping time is required.

TA-302 Mark III Unguided Torpedo

Descriptive: See TA-300 Mark I Unguided Torpedo.

Designation: * (asterisk) as in 5/CA.12***, 10/CS.85***, 8/S.6***, etc.

Prerequisite: TA-301 Mark II Unguided Torpedo

Development Cost: 30 MT

Item Cost: 4 MT per torp/tube – Must be mounted on any warship with 2 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90). Empty tubes are destroyed first.

Narrative: The operational characteristics of the Mark IV are the same as the Mark III except that the range is increased to 34, the attack factor to 14 and the platform requirement to at least 2 guns. There is no automatic upgrading of existing Mark II's after the Mark III has been developed. A ship with Mark II's or earlier must warp into and out of a friendly production center star, after which the torpedoes are upgraded at no cost. No stopping time is required. Ship size requirement must be respected.

TA-303 Mark IV Unguided Torpedo

Descriptive: See TA-300 Mark I Unguided Torpedo.

Designation: * (asterisk) as in 5/CA.12****, 10/CS.85****, 8/S.6****, etc.

Prerequisite: TA-302 Mark III Unguided Torpedo

Development Cost: 20 MT

Item Cost: 4 MT per torp/tube – Must be mounted on any warship with 2 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90). Empty tubes are destroyed first.

Narrative: The operational characteristics of the Mark IV are the same as the Mark III except that the range is increased to 36 and the attack factor to 16. There is no automatic upgrading of existing Mark III's after the Mark IV has been developed. A ship with Mark III's or earlier must warp into and out of a friendly production center star, after which the torpedoes are upgraded at no cost. No stopping time is required.

TA-304 Mark V Unguided Torpedo

Descriptive: See TA-300 Mark I Unguided Torpedo.

Designation: * (asterisk) as in 5/CA.12*****, 10/CS.85*****, 8/S.6*****, etc.

Prerequisite: TA-303 Mark IV Unguided Torpedo

Development Cost: 50 MT

Item Cost: 4 MT per torp/tube – Must be mounted on any warship with 3 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90). Empty tubes are destroyed first.

Narrative: The operational characteristics of the Mark V are the same as the Mark IV except that the range is increased to 38, the attack factor to 18 and the minimum platform requirement to a 3-gunner. Additionally, and most importantly, the Mark V has a proximity fuse that allows it to pass in near proximity to ships, moons, planets, radiation belts and rings without exploding. It will pass “through” a ship, but not the others.

The Marks V and VI Unguided Torpedoes *will* function as Marks I through IV for the purposes of canceling opposing torpedoes. The Mark V explodes when it is 1 square away from its designated target. The TA-223-225 Marks I, II and III Torpedo Interceptor (ti) capability is ineffective against the Mark V.

There is no automatic upgrading of existing Mark IV's after the Mark V has been developed. A ship with Mark IV's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required. Ship size requirement must be respected.

See illustration on the next page.

TA-305 Mark VI Unguided Torpedo

Descriptive: See TA-300 Mark I Unguided Torpedo.

Designation: ***** as in 5/CA.12*****, 10/CS.85*****, 8/S.6*****, etc.

Prerequisite: TA-304 Mark V Unguided Torpedo

Development Cost: 8 MT

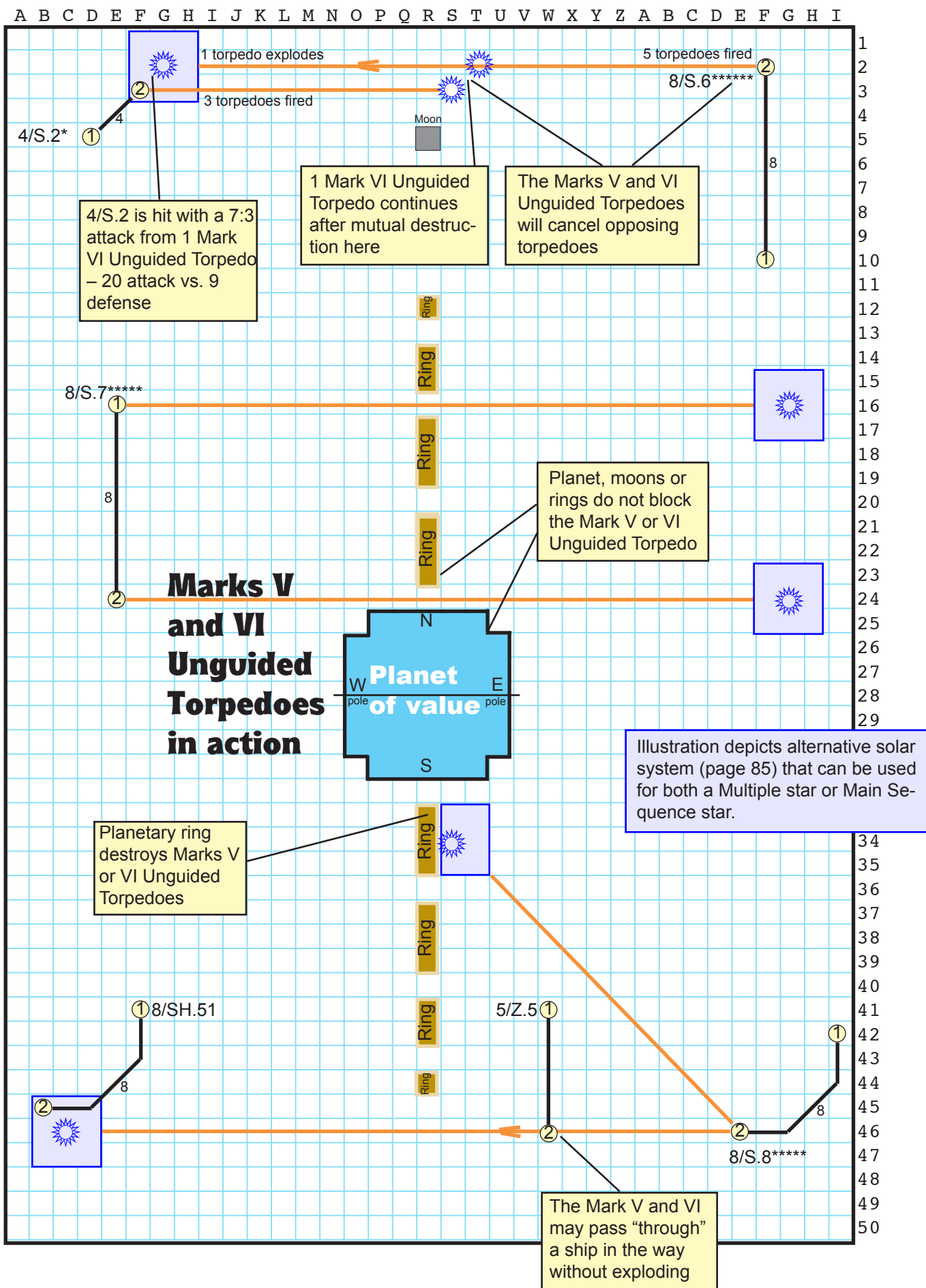
Item Cost: 4 MT per torp/tube – Must be mounted on any warship with 3 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90). Empty tubes are destroyed first.

Narrative: The operational characteristics of the Mark VI are the same as the Mark V except that the attack factor is increased to 20.

There is no automatic upgrading of existing Mark V's after the Mark VI has been developed. A ship with Mark V's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

See illustration on the next page.



TA-307 Torpilleur Capability (Unguided)

Descriptive: Allows a ship to carry twice the number of Unguided Torpedoes and tubes than it normally would.

Designation: _ (underline) as in 5/S.12 *****, 10/CS.85*****, etc.

Prerequisite: TA-303 Mark IV Unguided Torpedo

Development Cost: 4 MT

Item Cost: 8 MT for 2 torps and 2 tubes, e.g., 64 MT for an 8-gunner – May be mounted on any warship with 4 to 10 guns.

When inoperable: 2 torpedoes and 2 tubes are destroyed along with each gun (page 90). Empty tubes are destroyed first.

Narrative: A ship carries 2 torpedoes and 2 tubes for each gun. The entire complement of Unguided Torpedoes may be fired in a single salvo. All other operational characteristics of Unguided Torpedoes remain pertinent to the mark employed.

A ship upgraded to have Torpilleur Capability (Unguided) must warp into and out of a friendly production center star, after which the ship is considered upgraded. No stopping time is required. The full 8 MT per tube must be paid for the upgrade. The ship size requirement must be respected.

TA-310 Mark I Phyton Torpedo

Descriptive: The Mark I Phyton Torpedo is an exploding antimatter energy ball whose power depends on the size of the ship firing it. A warship sweeps up antimatter to recharge its torpedoes from the interplanetary phytosphere, hence its name. This torpedo is a powerful weapon for mid- and late-game empires of aggressive tendencies.

Designation: + (plus sign) as in 6/P.11+, 10/Z.86+, 8/DN.7ad|rd|td|+, etc.

Prerequisite: TA-110 10- to 14-Gun Warship Capability

Development Cost: 100 MT

Item Cost: 4 MT per gun – Must be mounted on a ship with 9 or more guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: A ship carries 1 Mark I Phyton Torpedo for each gun on the ship (TA-117 Double-Gun Warships carry 1 torpedo per long gun). The Mark I has a range of 30 and an attack factor of 1 per remaining gun on the firing ship. The Phyton explodes in the 8 squares around the exact location of the torpedo's antimatter blast. It fires every other turn and only a single target may be attacked each time it fires. Antimatter has a high sensitivity to the proximity of matter and will explode the instant it comes anywhere along its course within 1 square of:

- An approaching Phyton Torpedo of any mark
- Any planet, moon, ring or radiation belt
- Any ship (enemy or friendly)
- TA-211 Torpedo Interceptor
- TA-340 series of Asteroid Torpedo already in place
- It does *not* interact with the TA-300 series of Unguided Torpedoes, the TA-330 series of Toss Torpedoes, or the TA-350 and 360 series of Meandering Medusa.

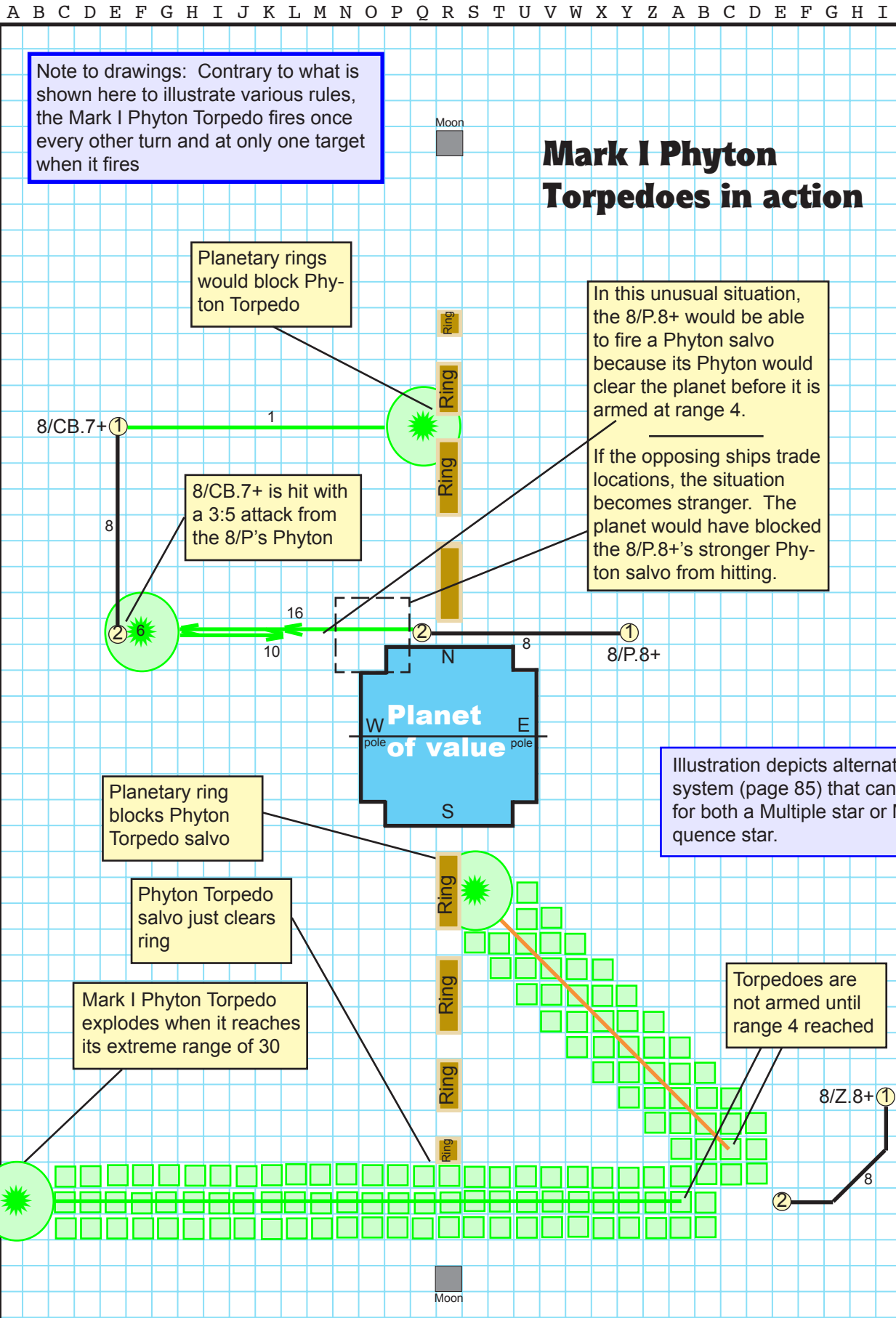
The torpedo must travel at least 4 movement factors before it is armed and able to explode. The torpedo's attack factor is computed against the target's total defense value after damage, if any, of previous turns and not whatever defense was assigned for that round. Added defense for speed is not used.

The Phyton Torpedo must travel along a straight line in any one of the 8 possible directions until it reaches its full range of 30. The torpedo is fired after ship movement on the battle board is complete. See sequence of events chart on page 93.

The Phyton Torpedo's antimatter energy ball may be partly neutralized by the target firing back with its own Phyton Torpedo. Equal numbers of opposing torpedos will cancel. The strongest Phyton Torpedo will continue with its remaining strength to hit the target. Examples: 7/P.3+ fires its 16-power Phyton at 8/CB.4, which fires back with its 10-power Phyton. The P's Phyton is 6 stronger than that of the CB, which results in an attack of 6:10 (factored to 3:5) against the CB.

A ship may carry only one type of torpedo.

The illustration on the next page depicts how this torpedo functions.



TA-311 Mark II Phyton Torpedo

Descriptive: Same as TA-310 Mark I Phyton Torpedo.

Designation: ++ as in 6/P.11++, 10/Z.86++, 8/DN+.7ad|rd|td|++, etc.

Prerequisite: TA-310 Mark I Phyton Torpedo

Development Cost: 8 MT

Item Cost: 4 MT per gun – Must be mounted on a ship with 9 or more guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark II are the same as the Mark I except that the range is increased to 32. There is no automatic upgrading of existing Mark I's after the Mark II has been developed. A ship with Mark I's must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-312 Mark III Phyton Torpedo

Descriptive: Same as TA-310 Mark I Phyton Torpedo.

Designation: +++ as in 6/P.11+++, 10/Z.86+++, 8/DN+.7ad|rd|td|+++, etc.

Prerequisite: TA-311 Mark II Phyton Torpedo

Development Cost: 70 MT

Item Cost: 6 MT per gun – Must be mounted on a ship with 9 or more guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark III are the same as the Mark II except that the weapon can be fired every turn (instead of every other turn). There is no automatic upgrading of existing Mark II's after the Mark III has been developed. A ship with Mark II's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-313 Mark IV Phyton Torpedo

Descriptive: Same as TA-310 Mark I Phyton Torpedo.

Designation: ++++ as in 6/P.11++++, 10/Z.86++++, 8/DN+.7ad|rd|td|++++, etc.

Prerequisite: TA-312 Mark III Phyton Torpedo

Development Cost: 30 MT

Item Cost: 8 MT per gun – Must be mounted on a ship with 9 or more guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark IV are the same as the Mark III except that range is increased to 34 and the attack factor is increased to 1.5 per remaining gun (drop fractions) on the firing ship. There is no automatic upgrading of existing Mark III's after the Mark IV has been developed. A ship with Mark III's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-314 Mark V Phyton Torpedo

Descriptive: Same as TA-310 Mark I Phyton Torpedo.

Designation: ++++++ as in 6/P.11+++++, 8/Z+.7ad|rd|td|+++, etc.

Prerequisite: TA-313 Mark IV Phyton Torpedo

Development Cost: 8 MT

Item Cost: 8 MT per gun – Must be mounted on a ship with 9 or more guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark V are the same as the Mark IV except that the range is increased to 36. There is no automatic upgrading of existing Mark IV's after the Mark V has been developed. A ship with Mark IV's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-315 Mark VI Phyton Torpedo

Descriptive: Same as TA-310 Mark I Phyton Torpedo.

Designation: ++++++ as in 6/P.11+++++, 8/Z+.7ad|rd|td|+++++, etc.

Prerequisite: TA-314 Mark V Phyton Torpedo

Development Cost: 30 MT

Item Cost: 8 MT per gun – Must be mounted on a ship with 9 or more guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark VI are the same as the Mark V except that the attack factor is increased to 2 per remaining gun on the firing ship. There is no automatic upgrading of existing Mark V's after the Mark VI has been developed. A ship with Mark V's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-320 Mark I Homing Torpedo

Descriptive: The Mark I Homing Torpedo uses inertial guidance and an intelligence sensing homing device to track the target. Effectiveness is reduced against stupid opponents. Its warhead consists of a mix of fusion alloys and geometrically organized entropy.

Designation: • (bullet) as in 5/CA.12•, 10/CS.85•, 8/S.6ad|rd|hd|md|td|•, etc.

Prerequisite: None

Development Cost: 100 MT

Item Cost: 4 MT per torp/tube – May be mounted on any ship with 1 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90). Empty tubes are destroyed first.

Narrative: A ship carries 1 Mark I Homing Torpedo for each gun on the ship (TA-117 Double-Gun Warships carry 1 torpedo per long gun). The Mark I has a range of 30 and an attack factor of 10 in the square containing the target. It is lost in space after reaching its range limit. The torpedo has a contact fuse and will explode if it hits:

- Any planet, moon, ring or radiation belt
- A *targeted* ship (it will travel *through* an untargeted ship)
- TA-340 series Asteroid Torpedo already in place

The Homing Torpedo has a significant failure rate determined by a die roll as follows:

- 1, 2, 3 = Miss
- 4, 5, 6 = Hit (roll again for effectiveness of TA-223-225 Torpedo Interceptor)

The torpedo must travel at least 2 movement factors before it is armed and able to explode. The torpedo's attack factor is computed against the target's total defense value after damage, if any, of previous turns and not whatever defense was assigned for that round. Added defense for speed is not used.

A ship may fire as many as 2 Mark I Homing Torpedoes per battle board round. If 2 are fired, they must each be at a different target. The torpedo is fired after ship movement on the battle board is complete. See sequence of events chart on page 93. The Homing Torpedo has the same angle of fire as a gun, i.e., only one 45° bend is allowed. Like gunfire, the exact course the Homing Torpedo follows to the target is not plotted.

A Homing Torpedo may not be used to knock a ship out of pre-warp. However, a Homing Torpedo *will* home in on, but fail to explode on any of the Group V TAs that project false ship profiles.

Torpedo reloads are available only at a friendly production center star. Each Mark I Homing Torpedo reload is free. No time is required to reload, just warp in, warp out and consider it done. A ship cannot transfer torpedoes to another ship.

A ship can carry only one type of torpedo.

The illustration on the next page depicts how this torpedo functions.

TA-321 Mark II Homing Torpedo

Descriptive: Same as TA-320 Mark I Homing Torpedo.

Designation: •• as in 9/CS.11••, 10/CA.86••, 8/S.7ad|rd|td|••, etc.

Prerequisite: TA-320 Mark I Homing Torpedo

Development Cost: 20 MT

Item Cost: 4 MT per gun – Must be mounted on a ship with 1 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark II are the same as the Mark I except that the range is increased to 32 and the attack factor to 12. There is no automatic upgrading of existing Mark I's after the Mark II has been developed. A ship with Mark I's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-322 Mark III Homing Torpedo

Descriptive: Same as TA-320 Mark I Homing Torpedo.

Designation: ••• as in 9/CS.11•••, 10/CA.86•••, 8/S.7ad|rd|td|•••, etc.

Prerequisite: TA-321 Mark II Homing Torpedo

Development Cost: 12 MT

Item Cost: 4 MT per gun – Must be mounted on a ship with 2 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark III are the same as the Mark II except that the range is increased to 34 and the attack factor to 14. There is no automatic upgrading of existing Mark II's after the Mark III has been developed. A ship with Mark II's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required. Ship size requirement must be respected.

TA-323 Mark IV Homing Torpedo

Descriptive: Same as TA-320 Mark I Homing Torpedo.

Designation: •••• as in 9/CS.11••••, 10/CA.86••••, 8/S.7ad|rd|td|••••, etc.

Prerequisite: TA-322 Mark III Homing Torpedo

Development Cost: 8 MT

Item Cost: 4 MT per gun – Must be mounted on a ship with 2 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark IV are the same as the Mark III except that the range is increased to 36 and the attack factor to 16. There is no automatic upgrading of existing Mark III's after the Mark IV has been developed. A ship with Mark III's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-324 Mark V Homing Torpedo

Descriptive: Same as TA-320 Mark I Homing Torpedo.

Designation: as in 9/CS.11....., 10/CA.86....., 8/S.7ad|rd|td|....., etc.

Prerequisite: TA-323 Mark IV Homing Torpedo

Development Cost: 8 MT

Item Cost: 4 MT per gun – Must be mounted on a ship with 3 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark V are the same as the Mark IV except that the range is increased to 38 and the attack factor to 18. There is no automatic upgrading of existing Mark IV's after the Mark V has been developed. A ship with Mark IV's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required. Ship size requirement must be respected.

TA-325 Mark VI Homing Torpedo

Descriptive: Same as TA-320 Mark I Homing Torpedo.

Designation: as in 9/CS.11....., 10/CA.86....., 8/S.7ad|rd|td|....., etc.

Prerequisite: TA-324 Mark V Homing Torpedo

Development Cost: 8 MT

Item Cost: 4 MT per gun – Must be mounted on a ship with 3 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark VI are the same as the Mark V except that the range is increased to 40 and the attack factor to 20. Additionally, the TA-223 series of Torpedo Interceptor (page 155) is ineffective against the Mark VI.

There is no automatic upgrading of existing Mark V's after the Mark VI has been developed. A ship with Mark V's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-327 Torpilleur Capability (Homing)

Descriptive: Allows a ship to carry twice the number of Homing Torpedoes and tubes than it normally would. This TA is largely unnecessary for the Homing Torpedo.

Designation: _ (underline) as in 5/Z.12~~.....~~, 10/CS.85 ~~.....~~, etc.

Prerequisite: TA-325 Mark VI Homing Torpedo

Development Cost: 4 MT

Item Cost: 8 MT for 2 torps and 2 tubes, e.g., 64 MT for an 8-gunner – May be mounted on any ship with 4 to 10 guns.

When inoperable: 2 torpedoes and 2 tubes are destroyed along with each gun (page 90). Empty tubes are destroyed first.

Narrative: A ship carries 2 torpedoes and 2 tubes for each gun. A ship may fire 2 Homing Torpedoes per battle board turn, but each must be fired at a different target. All other operational characteristics of Homing Torpedoes remain pertinent to the mark employed.

A ship upgraded to have Torpilleur Capability (Homing) must warp into and out of a friendly production center star, after which the ship is considered upgraded. No stopping time is required. The full 8 MT per tube must be paid for the upgrade. The ship size requirement must be respected.

TA-330 Mark I Toss Torpedo

Descriptive: The Mark I Toss Torpedo is tossed away from its mother ship before it begins moving toward the enemy. It uses inertial guidance to travel in a straight line toward the target. Its warhead consists of a potent mix of mysterious explosives.

Designation: ø (option-o) as in 5/CA.12ø, 10/CS.85ø, 8/S.6ø, etc.

Prerequisite: None

Development Cost: 100 MT

Item Cost: 4 MT per torp/tube – May be mounted on any ship with 1 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90). Empty tubes are destroyed first.

Narrative: A ship carries 1 Mark I Toss Torpedo for each gun on the ship (TA-117 Double-Gun Warships carry 1 torpedo per long gun). The Mark I has a speed of 20 and an attack factor of 10 in the 8 squares around the exact location of the torpedo blast. The torpedo has a proximity fuse and will explode the instant it comes anywhere along its course within 1 square of:

- An approaching Toss Torpedo of any mark
- Any planet, moon, ring or radiation belt
- Any ship (enemy or friendly)
- TA-211 Torpedo Interceptor
- TA-340 series Asteroid Torpedo already in place

The Mark I Toss Torpedo is similar to the Unguided Torpedo, except that it must be tossed a distance of 4 from the parent ship along one of the 8 directions. The Toss Torpedo then moves along its course the following battle board turn and keeps moving at speed 20 until it hits something or is lost in space. The Toss Torpedo is not visible to the enemy at its toss point, but is visible on all subsequent moves, and its movements are plotted like a ship.

No more than 8 may be launched per turn per ship, and not more than one may be programmed to travel the exact same course. No more than one may be tossed to the same battle board square, although it is possible for as many as 5 to go the same direction, but along different tracks. It is tossed after damage has been computed and will move along its course the same time other torpedoes are fired the next battle board turn. It explodes along with other torpedoes. See sequence of events chart on page 93.

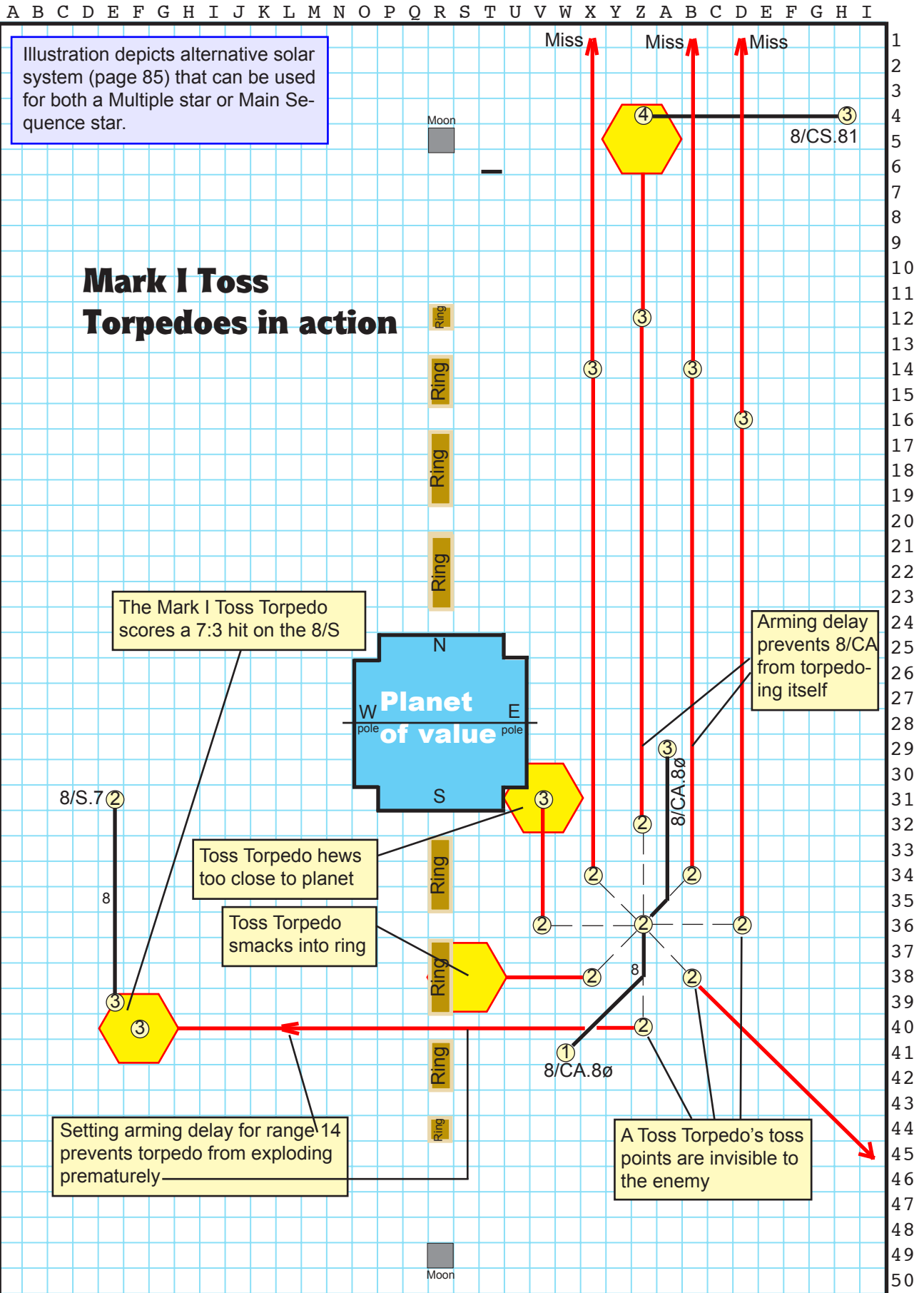
The direction the Toss Torpedo will travel from the toss point is determined when the torpedo makes its first speed 20 move. The torpedo is normally armed at the start of its speed 20 move, although the owner may delay the arming point to clear the firing ship or other friendly ships in the immediate area. The arming cannot be farther than range 14 from its toss point.

The torpedo's attack factor is computed against the target's total defense value after damage, if any, of previous turns and not whatever defense was assigned for that round. Added defense for speed is not used.

The target may fire its own Toss Torpedos, if it has any, in defense. Toss Torpedoes on opposing tracks will explode each other. See illustration on the next page.

Torpedo reloads are available only at a friendly production center star. Each Mark I Toss Torpedo reload is free. No time is required to reload, just warp in, warp out and consider it done. A ship cannot transfer torpedoes to another ship.

A ship can carry only one type of torpedo.



TA-331 Mark II Toss Torpedo

Descriptive: Same as TA-330 Mark I Toss Torpedo.

Designation: 00 as in 9/CS.1100, 10/CA.8600, 8/S.7ad|rd|td|00, etc.

Prerequisite: TA-330 Mark I Toss Torpedo

Development Cost: 20 MT

Item Cost: 6 MT per gun – Must be mounted on a ship with 1 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark II are the same as the Mark I except that the speed is increased to 24 and the attack factor to 12. There is no automatic upgrading of existing Mark I's after the Mark II has been developed. A ship with Mark I's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-332 Mark III Toss Torpedo

Descriptive: Same as TA-330 Mark I Toss Torpedo.

Designation: 000 as in 9/CS.11000, 10/CA.86000, 8/S.7ad|rd|td|000, etc.

Prerequisite: TA-331 Mark II Toss Torpedo

Development Cost: 12 MT

Item Cost: 6 MT per gun – Must be mounted on a ship with 2 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark III are the same as the Mark II except that the speed is increased to 28 and the attack factor to 14. There is no automatic upgrading of existing Mark II's after the Mark III has been developed. A ship with Mark II's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required. Ship size requirement must be respected.

TA-333 Mark IV Toss Torpedo

Descriptive: Same as TA-330 Mark I Toss Torpedo.

Designation: 0000 as in 9/CS.110000, 10/CA.860000, 8/S.7ad|rd|td|0000, etc.

Prerequisite: TA-332 Mark III Toss Torpedo

Development Cost: 8 MT

Item Cost: 6 MT per gun – Must be mounted on a ship with 2 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark IV are the same as the Mark III except that the speed is increased to 32 and the attack factor to 16. There is no automatic upgrading of existing Mark III's after the Mark IV has been developed. A ship with Mark III's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-334 Mark V Toss Torpedo

Descriptive: Same as TA-330 Mark I Toss Torpedo.

Designation: 000000 as in 9/CS.11000000, 4/CA.86000000, 8/S.7ad|rd|td|000000, etc.

Prerequisite: TA-333 Mark IV Toss Torpedo

Development Cost: 50 MT

Item Cost: 6 MT per gun – Must be mounted on a ship with 3 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark V are the same as the Mark IV except that the range is increased to 36 and the attack factor to 18. Additionally, and most importantly, the Mark V has a proximity fuse that allows it to pass in near proximity to ships, moons, planets, radiation belts and rings without exploding. It will pass “through” a ship, but not the others. The Marks V and VI Toss Torpedoes *will* function as Marks I through IV for the purposes of canceling opposing torpedoes. The Mark V explodes when it is 1 square away from its designated target. The TA-223-225 Marks I, II and III Torpedo Interceptor (ti) is ineffective against the Mark V.

There is no automatic upgrading of existing Mark IV's after the Mark V has been developed. A ship with Mark IV's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required. Ship size requirement must be respected.

TA-335 Mark VI Toss Torpedo

Descriptive: Same as TA-330 Mark I Toss Torpedo.

Designation: 0000000 as in 9/CS.110000000, 8/CA.7ad|rd|td|0000000, etc.

Prerequisite: TA-334 Mark V Toss Torpedo

Development Cost: 8 MT

Item Cost: 6 MT per gun – Must be mounted on a ship with 3 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark VI are the same as the Mark V except that the range is increased to 38 and the attack factor to 20. There is no automatic upgrading of existing Mark V's after the Mark VI has been developed. A ship with Mark V's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-337 Torpilleur Capability (Toss)

Descriptive: Allows a ship to carry twice the number of Toss Torpedoes and tubes than it normally would.

Designation: _ (underline) as in 5/CA.120000000, 10/CS.850000000, etc.

Prerequisite: TA-325 Mark VI Toss Torpedo

Development Cost: 4 MT

Item Cost: 12 MT for 2 torps and 2 tubes, e.g., 96 MT for an 8-gunner – Must be mounted on a warship with 4 to 10 guns.

When inoperable: 2 torpedoes and 2 tubes are destroyed along with each gun (page 90). Empty tubes are destroyed first.

Narrative: A ship carries 2 torpedoes and 2 tubes for each gun. All other operational characteristics of Toss Torpedoes remain pertinent to the mark employed.

A ship upgraded to have Torpilleur Capability (Toss) must warp into and out of a friendly production center star, after which the ship is considered upgraded. No stopping time is required. The full 12 MT per tube must be paid for the upgrade. The ship size requirement must be respected.

TA-340 Mark I Asteroid Torpedo

Descriptive: The Mark I Asteroid Torpedo is nothing more than a powered rock with no explosive that goes out from its launching ship and stops. It acts as an obstruction for ships to run into. Damage will be caused if a bunch of them are placed properly in front of an oncoming ship. The rocks also can act as a barrier against other types of torpedoes.

Designation: Å (option-a) as in 4/CA.12Å, 10/CS.85Å, 8/S.6Å, etc., (or can use a lower-case a)

Prerequisite: None

Development Cost: 50 MT

Item Cost: 4 MT per gun (the 4 rocks per gun are free); an 8-gunner, for example, will carry 32 rocks.

When inoperable: Launching tubes are destroyed along with guns (page 90). Empty tubes are destroyed first.

Narrative: A ship carries 2 Mark I Asteroid Torpedoes for each gun on the ship (TA-117 Double-Gun Warships carry 1 torpedo per long gun). Must be on a warship with 4 to 10 guns. The Mark I has a range of 30 and an attack factor of 2:1 against any ship that runs into it. The torpedo is an inert rock with no explosive, so both the TA-210 Torpedo Deflector and the TA-211 Torpedo Interceptor are ineffective. However, a ship carrying TA-200 Asteroid Deflector or TA-210 Super Deflector reduces the Asteroid Torpedo's collision attack factor to 1:1.

The Asteroid Torpedo may be fired in any direction as long as its course of travel has no more than one 45° bend in it (see Homing Torpedo illustration on page 172 for an example of this). A ship may fire its entire complement of torpedoes in a single salvo, if desired. The torpedo is fired after ship movement on the battle board is complete, but before any other weapons are fired, which means that it can block torpedoes or cause a targeted ship to use its guns and/or torpedoes to blast a path through the rocks so the ship can safely move the next turn.

The following weapons and circumstances destroy an Asteroid Torpedo:

- A collision with any size of ship
- An explosion from any type of the Group IV Torpedo TAs.
- One gun directed at an Asteroid Torpedo will destroy it

The Asteroid Torpedo has a number of uses, among them:

- To soak off enemy gunfire to clear a path for a ship's movement next turn
- To damage an enemy ship that runs into it
- To screen off enemy gunfire by creating a wall of rocks
- To provide a screen through which enemy torpedoes cannot pass.

Torpedo reloads are available only at a friendly production center star. Each Mark I Unguided Torpedo reload is free. No time is required to reload, just warp in, warp out and consider it done. A ship cannot transfer torpedoes to another ship.

A ship can carry only one type of torpedo.

The illustration on the next page depicts how this torpedo functions.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z A B C D E F G H I

Illustration depicts alternative solar system (page 85) that can be used for both a Multiple star or Main Sequence star.

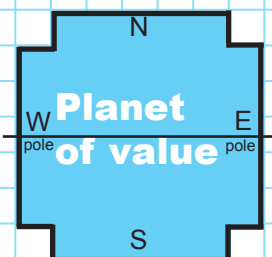
Moon

Mark I Asteroid Torpedoes in action

The 8/S.8a fires 23 of its complement of 36 Asteroid Torpedoes to force 8/CS.81*** to expend gun-fire to blast a hole in the barricade.

Asteroid Torpedoes are fired after ships move and before guns or other torpedoes are fired.

The asteroids are so close to the 8/CS that its Unguided (or Phytion) Torpedoes would be destroyed before they reached arming distance. Homing Torpedoes would be effective. Toss Torpedoes would be partially effective. The Meandering Medusa moves with ships, so would not be effective.



8/CS.81***

Note the change in symbol to @ when plotting the Asteroid Torpedo on the battle board

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TA-341 Mark II Asteroid Torpedo

Descriptive: Same as TA-340 Mark I Asteroid Torpedo.

Designation: åå (option-a) as in 9/CS.11åå, 10/Z.86åå, 8/DN+.7ad|rd|td|åå, etc., (or can use a lowercase a)

Prerequisite: TA-340 Mark I Asteroid Torpedo. Must be on 4- to 10-gun warship.

Development Cost: 12 MT

Item Cost: Same as TA-340 Mark I Asteroid Torpedo

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark II are the same as the Mark I except that the range is increased to 32. There is no automatic upgrading of existing Mark I's after the Mark II has been developed. A ship with Mark I's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-342 Mark III Asteroid Torpedo

Descriptive: Same as TA-340 Mark I Asteroid Torpedo.

Designation: ååå as in 9/CS.11ååå, 10/Z.86ååå, 8/DN+.7ad|rd|td|ååå, etc., (or can use a lowercase a)

Prerequisite: TA-341 Mark II Asteroid Torpedo. Must be on 4- to 10-gun warship.

Development Cost: 8 MT

Item Cost: Same as TA-340 Mark I Asteroid Torpedo

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark III are the same as the Mark II except that the range is increased to 34. There is no automatic upgrading of existing Mark II's after the Mark III has been developed. A ship with Mark II's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-343 Mark IV Asteroid Torpedo

Descriptive: Same as TA-340 Mark I Asteroid Torpedo.

Designation: åååå as in 9/CS.11åååå, 10/Z.86åååå, 8/DN+.7ad|rd|td|åååå, etc., (or can use a lowercase a)

Prerequisite: TA-342 Mark III Asteroid Torpedo. Must be on 4- to 10-gun warship.

Development Cost: 4 MT

Item Cost: Same as TA-340 Mark I Asteroid Torpedo

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark IV are the same as the Mark III except that the range is increased to 36. There is no automatic upgrading of existing Mark III's after the Mark IV has been developed. A ship with Mark III's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-344 Mark V Asteroid Torpedo

Descriptive: Same as TA-340 Mark I Asteroid Torpedo.

Designation: ååååå as in 9/CS.11ååååå, 10/Z.86ååååå, 8/DN+.7ad|rd|td|ååååå, etc., (or can use a lowercase a)

Prerequisite: TA-343 Mark IV Asteroid Torpedo. Must be on 4- to 10-gun warship.

Development Cost: 8 MT

Item Cost: Same as TA-340 Mark I Asteroid Torpedo

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark V are the same as the Mark IV except that the range is increased to 38. There is no automatic upgrading of existing Mark IV's after the Mark V has been developed. A ship with Mark IV's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-345 Mark VI Asteroid Torpedo

Descriptive: Same as TA-340 Mark I Asteroid Torpedo.

Designation: åååååå as in 9/CS.11åååååå, 10/Z.86åååååå, 8/DN+.7ad|rd|td|åååååå, etc., (or can use a lowercase a)

Prerequisite: TA-344 Mark V Asteroid Torpedo. Must be on 4- to 10-gun warship.

Development Cost: 4 MT

Item Cost: Same as TA-340 Mark I Asteroid Torpedo

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark VI are the same as the Mark V except that the range is increased to 40. There is no automatic upgrading of existing Mark V's after the Mark VI has been developed. A ship with Mark V's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-347 Torpilleur Capability (Asteroid)

Descriptive: This TA is not available. The rocks are too heavy.

TA-350 Mark I Meandering Medusa (Missile)

Descriptive: The Mark I Meandering Medusa is a guided missile that is programmed to travel along a pre-determined course until it (hopefully) reaches a damaging proximity to its target, where it will explode. The warhead is packed with fanciful science fiction balderdash that cannot be explained in terms that will ever enter the human lexicon.

Designation: Δ (option-j) as in 4/Z.12 Δ , 10/DN.85 Δ , 8/P.6 Δ , etc. (lowercase m can be used, although it is not the preferred symbol)

Prerequisite: None

Development Cost: 80 MT

Item Cost: 2 MT per launching rack and 6 MT per missile = 8 MT each. Must be on a warship having 8 or more guns; 1 Meandering Medusa rack/missile for every 4 guns. An 11-gunner, for example, can carry 2 Meandering Medusas, a 12-gunner 3, and a 30-gunner 7.

When inoperable: Launching racks/missiles are destroyed along with guns (page 90). Empty racks are destroyed first.

Narrative: A Mark I Meandering Medusa has an attack factor of 16 in a 7-squares by 7 area on the battle board. It travels at a speed of 20 (or less) for 4 moves (or fewer) on the battle board, giving it a total range of 80. The missile's entire 4-move course must be recorded at the time of launching. Movement is simultaneous with ships. The missile has unlimited maneuverability. A missile explodes at the end of its final move if it has not been programmed to explode sooner. Explosions are simultaneous with that of other torpedo types.

The Meandering Medusa cannot be attacked by gunfire. However, all marks of the Meandering Medusa are vulnerable to attack by some other torpedoes, which will destroy it and the attacking torpedo. They are: TA-300 series Unguided Torpedo, TA-310 series Phyton Torpedo, TA-320 series Homing Torpedo and TA-330 series Toss Torpedo.

The Meandering Medusa will explode as programmed even if it is hit by one of the torpedoes listed above. It will also explode if programmed to do so when it ends a move in the same square with a ship, TA-340 Asteroid Torpedo, TA-211 Torpedo Interceptor, another Meandering Medusa or any Meandering Medusa's blast pattern.

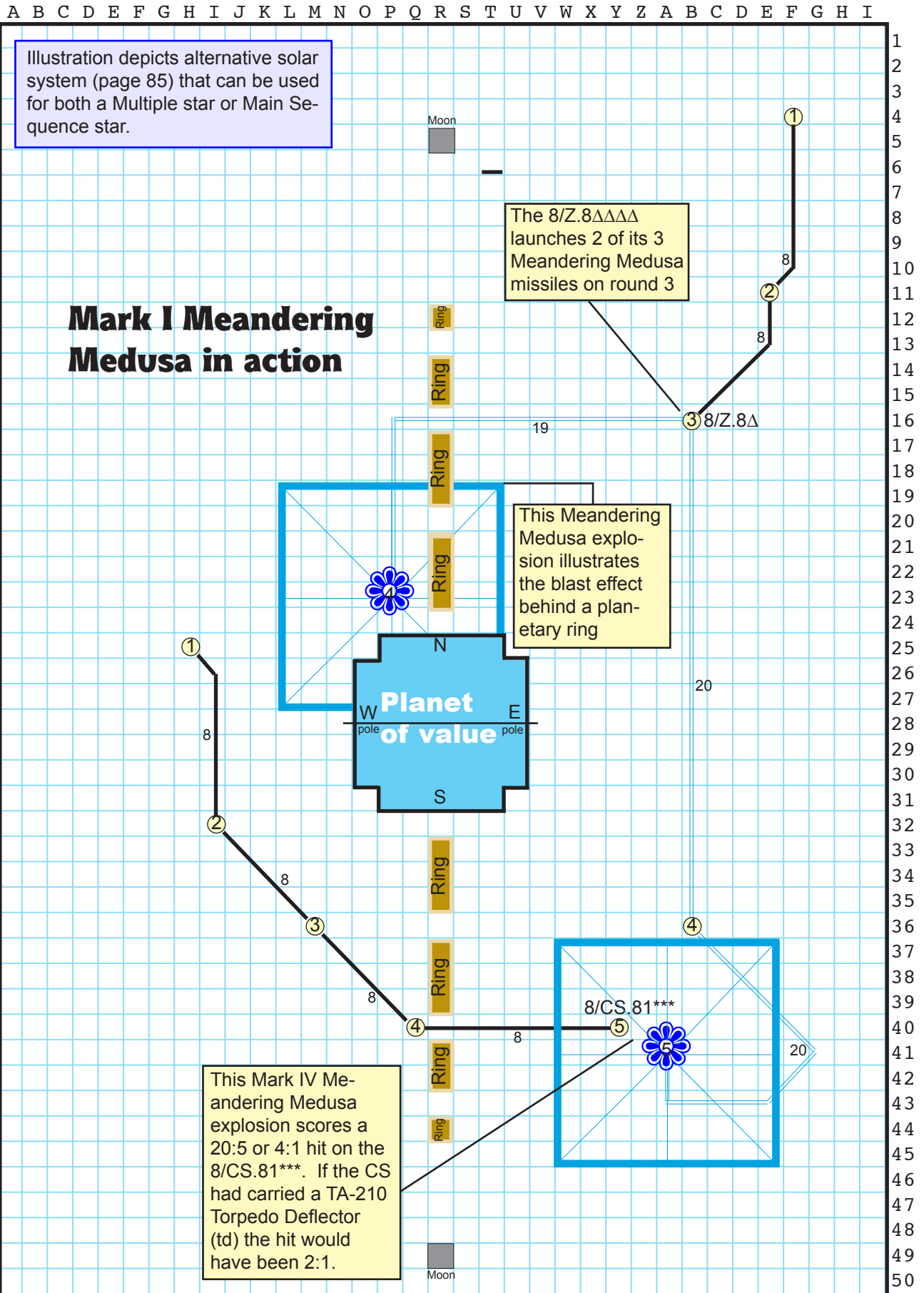
The Meandering Medusa is lost if it ends a move in the same square with a planet, moon, ring, radiation belt, ship, another Meandering Medusa, TA-211 series Torpedo Interceptor, TA-340 series Asteroid Torpedo or within the blast pattern of another TA-350 series Meandering Medusa.

A Meandering Medusa will knock a ship out of pre-warp with either its track or its blast pattern. A blast pattern is not screened out by moons or anything else that may be in the way.

Meandering Medusa reloads are available only at a friendly production center star. Each reload costs 6 MT per missile. No time is required to reload, just warp in, warp out and consider it done. A ship cannot transfer Meandering Medusa missiles to another ship.

A ship can carry only one type of torpedo.

The illustration on the next page depicts how the Mark IV version of this missile functions. The Mark IV has a larger blast pattern and more hitting power than the Mark I, otherwise it is the same.



TA-351 Mark II Meandering Medusa (Missile)

Descriptive: Same as TA-350 Mark I Meandering Medusa.

Designation: ΔΔ (option-j) as in 9/BB.11ΔΔ, 10/Z.86ΔΔ, 8/DN.7ad|rd|td|ΔΔ, etc., (or can use a lowercase m)

Prerequisite: TA-350 Mark I Meandering Medusa. Must be on 8-gun ship or larger.

Development Cost: 40 MT

Item Cost: Same as TA-350 Mark I Meandering Medusa

When inoperable: Launching racks/missiles are destroyed along with guns (page 90). Empty racks are destroyed first.

Narrative: The operational characteristics of the Mark II are the same as the Mark I except that the target square can be reprogrammed at the end of each move, even if the launching ship was destroyed on the previous move. There is no automatic upgrading of existing Mark I's after the Mark II has been developed. A ship with Mark I's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-352 Mark III Meandering Medusa (Missile)

Descriptive: Same as TA-350 Mark I Meandering Medusa

Designation: ΔΔΔ as in 9/BB.11ΔΔΔ, 10/Z.86ΔΔΔ, 8/DN.7ad|rd|td|ΔΔΔ, etc., (or can use a lowercase m)

Prerequisite: TA-351 Mark II Meandering Medusa. Must be on 8-gun ship or larger.

Development Cost: 40 MT

Item Cost: Same as TA-350 Mark I Meandering Medusa

When inoperable: Launching racks/missiles are destroyed along with guns (page 90). Empty racks are destroyed first.

Narrative: The operational characteristics of the Mark III are the same as the Mark II except that the blast pattern is expanded to 9-squares by 9 on the battle board. There is no automatic upgrading of existing Mark II's after the Mark III has been developed. A ship with Mark II's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-353 Mark IV Meandering Medusa (Missile)

Descriptive: Same as TA-350 Mark I Meandering Medusa

Designation: ΔΔΔΔ as in 9/BB.11ΔΔΔΔ, 10/Z.86ΔΔΔΔ, 8/DN.7ad|rd|td|ΔΔΔΔ, etc., (or can use a lowercase m)

Prerequisite: TA-352 Mark III Meandering Medusa. Must be on 8-gun ship or larger.

Development Cost: 20 MT

Item Cost: Same as TA-350 Mark I Meandering Medusa

When inoperable: Launching racks/missiles are destroyed along with guns (page 90). Empty racks are destroyed first.

Narrative: The operational characteristics of the Mark IV are the same as the Mark III except that the attack factor is increased to 20. There is no automatic upgrading of existing Mark III's after the Mark IV has been developed. A ship with Mark III's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-354 Mark V Meandering Medusa (Missile)

Descriptive: Same as TA-350 Mark I Meandering Medusa

Designation: ΔΔΔΔΔ as in 9/BB.11ΔΔΔΔΔ, 10/Z.86ΔΔΔΔΔ, 8/P.7ad|rd|td|ΔΔΔΔΔ, etc., (or can use a lowercase m)

Prerequisite: TA-353 Mark IV Meandering Medusa. Must be on 8-gun ship or larger.

Development Cost: 12 MT

Item Cost: Same as TA-350 Mark I Meandering Medusa

When inoperable: Launching racks/missiles are destroyed along with guns (page 90). Empty racks are destroyed first.

Narrative: The operational characteristics of the Mark V are the same as the Mark IV except that the attack factor is increased to 24. There is no automatic upgrading of existing Mark IV's after the Mark V has been developed. A ship with Mark IV's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-355 Mark VI Meandering Medusa (Missile)

Descriptive: Same as TA-350 Mark I Meandering Medusa

Designation: ΔΔΔΔΔΔ as in 9/BB.11ΔΔΔΔΔΔ, 10/Z.86ΔΔΔΔΔΔ, 8/DN+.7ad|rd|td|ΔΔΔΔΔ, etc., (or can use a lowercase m)

Prerequisite: TA-354 Mark V Meandering Medusa. Must be on 8-gun ship or larger.

Development Cost: 8 MT

Item Cost: Same as TA-350 Mark I Meandering Medusa

When inoperable: Launching racks/missiles are destroyed along with guns (page 90). Empty racks are destroyed first.

Narrative: The operational characteristics of the Mark VI are the same as the Mark V except that the attack factor is increased to 28. There is no automatic upgrading of existing Mark V's after the Mark VI has been developed. A ship with Mark V's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-357 Torpilleur Capability (Meandering Medusa)

Descriptive: This TA is not available. The missiles are too big.

TA-360 Super Meandering Medusa (Missile)

Descriptive: The Super Meandering Medusa is a guided missile that is programmed to travel along a pre-determined course until it (hopefully) reaches a proximity to its target where it will deploy its warhead. The warhead is packed with a choice of Group IV Torpedo TAs, which are handled according to the rules pertinent for each type.

Designation: Δ00000, Δ (option-j) as in 4/Z.12Δ+++++, 10/P.85Δ*****, 8/CB.6Δ... (lowercase m can be used instead of the Δ, although it is not preferred).

Prerequisite: TA-351 Mark II Meandering Medusa and the appropriate mark of torpedo that makes up its warhead. Note below that early marks are precluded.

Development Cost: 90 MT

Item Cost: 2 MT per launching rack, 4 MT per missile and 10 MT for each warhead = 16 MT each. Must be on a warship having 8 or more guns; 1 Super Meandering Medusa rack/missile for every 4 guns. A 15-gunner, for example, can carry 3 Super Meandering Medusas, a 16-gunner 4, and a 30-gunner 7. A ship carries a full complement of these missiles unless otherwise specified.

When inoperable: Launching racks/missiles are destroyed along with guns (page 90). Empty racks are destroyed first.

Narrative: A Super Meandering Medusa travels at a speed of 20 (or less) for 4 moves (or fewer) on the battle board, giving it a total range of 80. The missile's entire 4-move course must be recorded at the time of launching but may be reprogrammed at the end of each move, even if the launching ship was destroyed on the previous turn.

Note that a large warship may *not* mix types of Super Meandering Medusa missiles even if all the TA prerequisites have been developed. That'd be too confusing.

The warhead of the Super Meandering Medusa is made up of 1 of 4 other torpedoes:

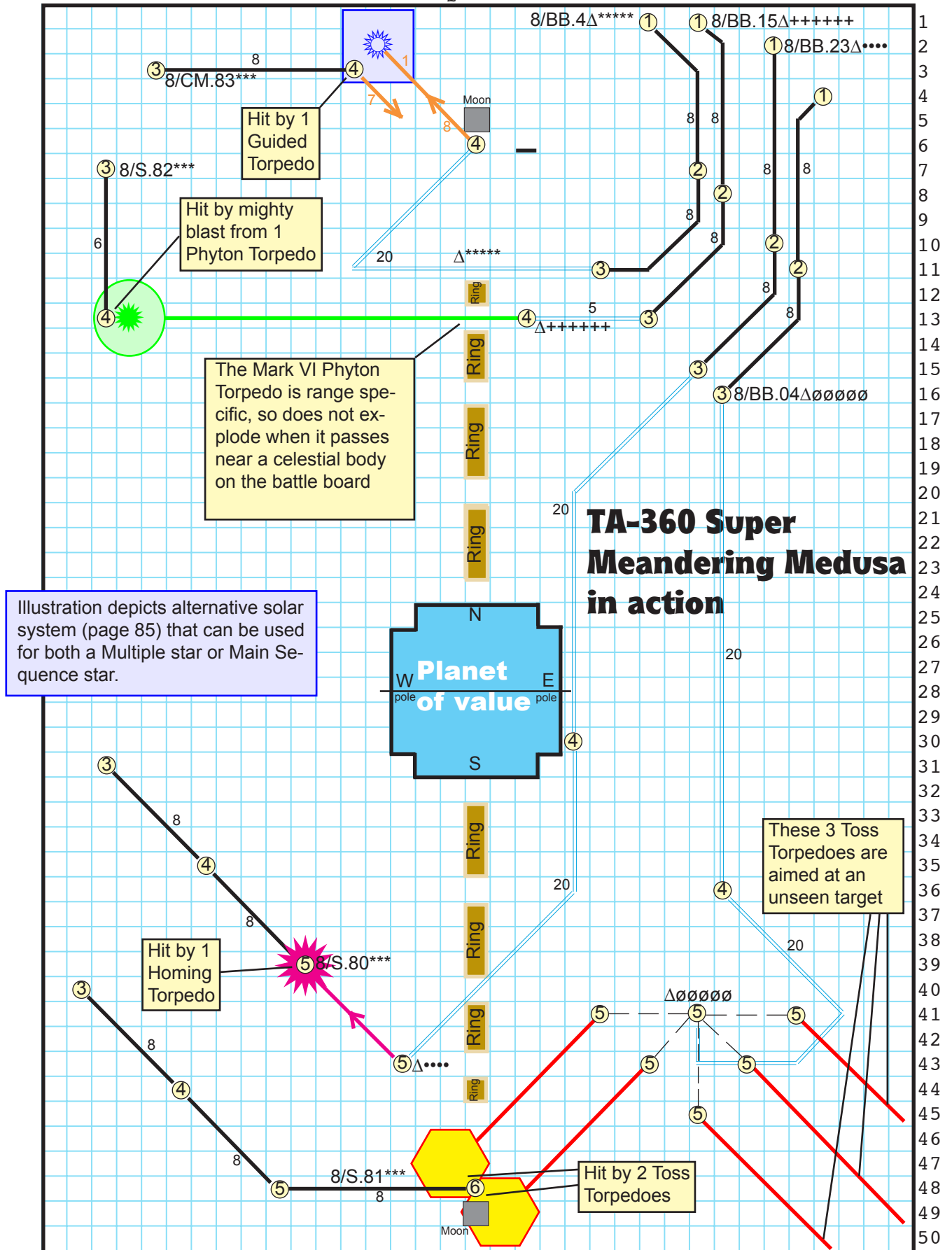
- TA-300 series of Unguided Torpedo – Δ*****, Mark V Unguided only, 8 carried, up to 8 directions. Note that this is a range setter mark allowing the ***** to pass by objects.
- TA-310 series of Phyton Torpedo – Δ+++++, Mark VI Phyton only, 1 carried with attack factor 40, 1 target.
- TA-320 series of Homing Torpedo – Δ..., Mark IV Homing only, 8 carried, 1 per target.
- TA-330 series of Toss Torpedo – Δ00000, Mark V Toss only, 8 carried, up to 8 directions. Note that this is a range setter mark allowing the 00000 to pass by objects.

Movement is simultaneous with ships. The missile has unlimited maneuverability. A missile is lost if it has not been programmed to fire its torpedoes during its first 4 moves. The torpedoes it unleashes operate just as other torpedoes of that type.

The Super Meandering Medusa is lost as per rules under TA-350 Mark I Meandering Medusa.

A Super Meandering Medusa will knock a ship out of pre-warp with either its track or its deployment and operation of its torpedoes. Its deployment of torpedoes is prevented by moons or anything else that may be in the way.

Super Meandering Medusa reloads are available only at a friendly production center star. Each reload costs 14 MT per missile. No time is required to reload, just warp in, warp out and it is done. A ship cannot transfer Super Meandering Medusa missiles to another ship.



TA-370 Mark I Negative Energy Torpedo

Descriptive: The Mark I Negative Energy Torpedo creates an effect pattern of negative energy that totally neutralizes the guns/defense, all TAs and maneuverability of a ship as long as that ship remains within the negative energy effect pattern. No weapon or natural hazard can attack the victim of a Negative Energy Torpedo, so the net effect is to eliminate temporarily a ship's battle effectiveness.

Designation: ! as in 4/S.12!, 10/CS.85!, 8/CA.6!, etc. (the common exclamation point, not to be confused with the upsidedown j used to indicate TA-600 series of Sub-Warp Drive)

Prerequisite: None

Development Cost: 100 MT

Item Cost: 4 MT per torp/tube – May be mounted on any ship with 4 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90). Empty tubes are destroyed first.

Narrative: A ship carries 1 Mark I Negative Energy Torpedo for each gun on the ship (TA-117 Double-Gun Warships carry 1 torpedo per long gun). The Mark I has a range of 26 and a 3 x 3 squares negative energy effect pattern. The torpedo must travel at least 8 movement factors before it is armed and able to explode. The blast pattern stays on the battle board until a battle is completed or stalemated. Effect patterns can overlap. The torpedo explodes only as directed by the owner. The torpedo will self-destruct without effect if its negative energy effect pattern encompasses any planet, moon, ring or radiation belt.

The Negative Energy Torpedo creates a “blast” pattern that negates a ship's guns/defense, all TAs, maneuverability and ability to enter pre-warp. The victim cannot be attacked or affected by anything while *in* the “blast” pattern. A ship (or torpedoes) will travel along at its last unaffected course and speed until it drifts clear of the negative energy effect pattern. A ship using the TA-600 series of Sub-Warp Drive suffers the same effect as ships and torpedoes while *in* the Negative Energy Torpedo's effect pattern.

The value of this torpedo has to do with taking an enemy ship out of a battle at a critical juncture. A second effective strategy is to cause an enemy ship to drift into a planet, moon, ring or radiation belt located just outside the “blast” pattern and be destroyed (as illustrated on the next page).

A ship may fire any number of its complement of Mark I Negative Energy torpedoes per battle board round. The torpedo is fired after ship movement on the battle board is complete. See sequence of events chart on page 93. The Negative Energy Torpedo has the same angle of fire as a gun, i.e., only one 45° bend is allowed. Like gunfire, the exact course the Negative Energy Torpedo follows to the target is not plotted unless needed to determine legality of the line of fire.

The Negative Energy Torpedo will not knock a ship out of pre-warp.

Torpedo reloads are available only at a friendly production center star. Each Mark I Negative Energy Torpedo reload is free. No time is required to reload, just warp in, warp out and consider it done. A ship cannot transfer torpedoes to another ship.

A ship can carry only one type of torpedo.

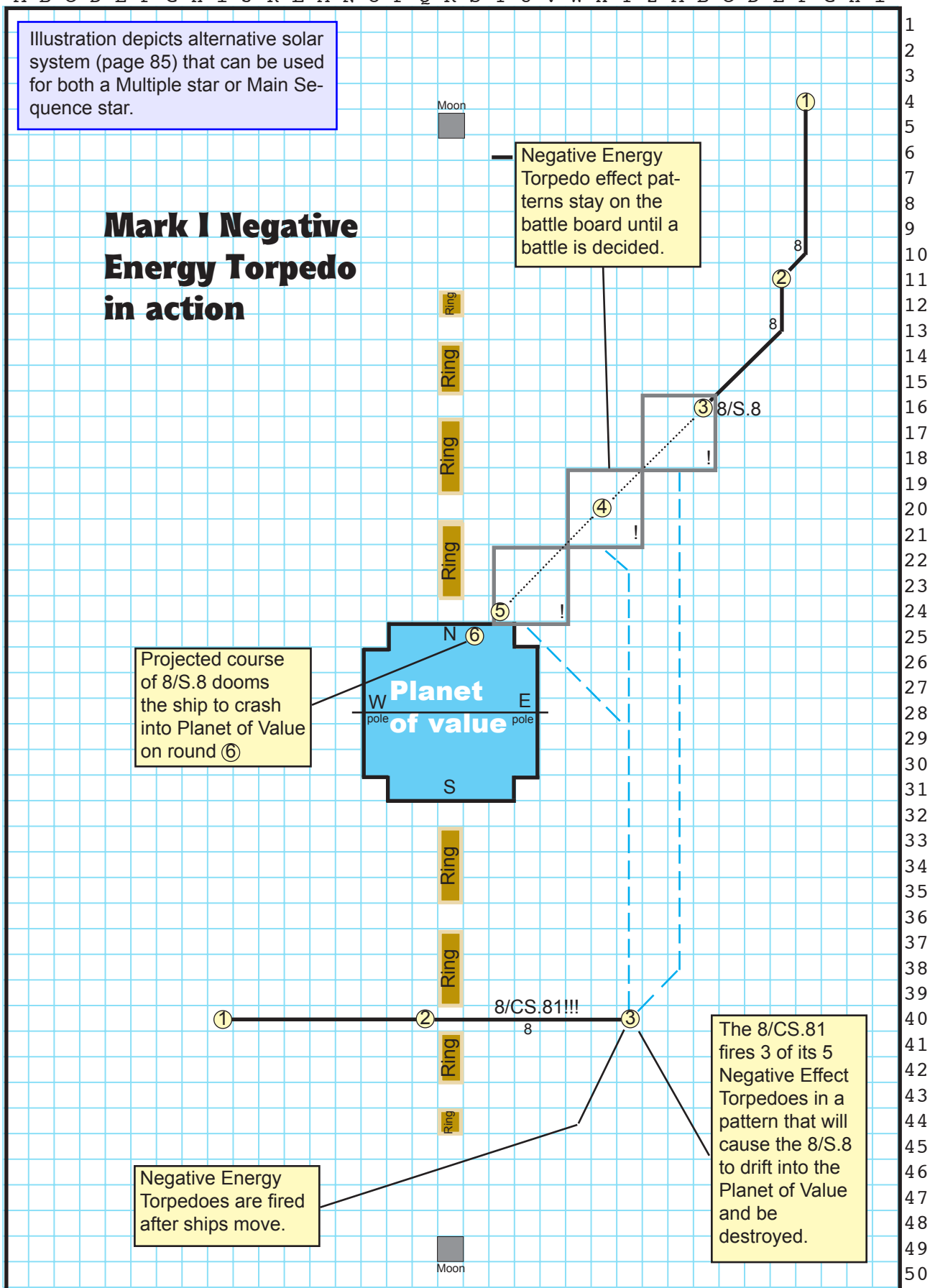
The illustration on the next page depicts how this torpedo functions.

Mark I Negative Energy Torpedo in action

Projected course of 8/S.8 dooms the ship to crash into Planet of Value on round (6)

Negative Energy
Torpedoes are fired
after ships move.

The 8/CS.81 fires 3 of its 5 Negative Effect Torpedoes in a pattern that will cause the 8/S.8 to drift into the Planet of Value and be destroyed.



TA-371 Mark II Negative Energy Torpedo

Descriptive: Same as TA-370 Mark I Negative Energy Torpedo.

Designation: !! as in 9/CS.11!!, 10/CA.86!!, 8/S.7ad|rd|td|!!, etc.

Prerequisite: TA-370 Mark I Negative Energy Torpedo

Development Cost: 12 MT

Item Cost: 4 MT per torp/tube – May be mounted on any ship with 4 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark II are the same as the Mark I except that the range is increased to 28. There is no automatic upgrading of existing Mark I's after the Mark II has been developed. A ship with Mark I's must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-372 Mark III Negative Energy Torpedo

Descriptive: Same as TA-370 Mark I Negative Energy Torpedo.

Designation: !!! as in 9/CS.11!!!, 10/CA.86!!!, 8/S.7ad|rd|td|!!!, etc.

Prerequisite: TA-371 Mark II Negative Energy Torpedo

Development Cost: 10 MT

Item Cost: 4 MT per torp/tube – May be mounted on any ship with 4 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark III are the same as the Mark II except that the range is increased to 32. There is no automatic upgrading of existing Mark II's after the Mark III has been developed. A ship with Mark II's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-373 Mark IV Negative Energy Torpedo

Descriptive: Same as TA-370 Mark I Negative Energy Torpedo.

Designation: !!!! as in 9/CS.11!!!!, 10/CA.86!!!!, 8/S.7ad|rd|td|!!!!, etc.

Prerequisite: TA-372 Mark III Negative Energy Torpedo

Development Cost: 8 MT

Item Cost: 4 MT per torp/tube – May be mounted on any ship with 4 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark IV are the same as the Mark III except that the range is increased to 34. There is no automatic upgrading of existing Mark III's after the Mark IV has been developed. A ship with Mark III's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-374 Mark V Negative Energy Torpedo

Descriptive: Same as TA-370 Mark I Negative Energy Torpedo.

Designation: !!!!! as in 9/CS.11!!!!, 10/CA.86!!!!, 8/S.7ad|rd|td|!!!!, etc.

Prerequisite: TA-373 Mark IV Negative Energy Torpedo

Development Cost: 6 MT

Item Cost: 4 MT per torp/tube – May be mounted on any ship with 4 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark V are the same as the Mark IV except that the range is increased to 36. There is no automatic upgrading of existing Mark IV's after the Mark V has been developed. A ship with Mark IV's must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-375 Mark VI Negative Energy Torpedo

Descriptive: Same as TA-370 Mark I Negative Energy Torpedo.

Designation: !!!!! as in 9/CS.11!!!!, 10/CA.86!!!!, 8/S.7ad|rd|td|!!!!, etc.

Prerequisite: TA-374 Mark V Negative Energy Torpedo

Development Cost: 4 MT

Item Cost: 4 MT per torp/tube – May be mounted on any ship with 4 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark VI are the same as the Mark V except that the range is increased to 38. There is no automatic upgrading of existing Mark V's after the Mark VI has been developed. A ship with Mark V's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-376 Torpilleur Capability (Negative Energy)

Descriptive: Allows a ship to carry twice the number of Negative Energy Torpedoes and tubes than it normally would.

Designation: _ (underline) as in 5/CA.12!!!!, 10/CS.85@!! , etc.

Prerequisite: TA-372 Mark III Negative Energy Torpedo

Development Cost: 4 MT

Item Cost: 8 MT for 2 torps and 2 tubes, e.g., 64 MT for an 8-gunner – Must be mounted on a warship with 4 to 10 guns.

When inoperable: 2 torpedoes and 2 tubes are destroyed along with each gun (page 90). Empty tubes are destroyed first.

Narrative: A ship carries 2 torpedoes and 2 tubes for each gun. All other operational characteristics of Negative Energy Torpedoes remain pertinent to the mark employed.

A ship upgraded to have Torpilleur Capability (Negative Energy) must warp into and out of a friendly production center star, after which the ship is considered upgraded. No stopping time is required. The full 12 MT per tube must be paid for the upgrade. The ship size requirement must be respected.

TA-380 Mark I Confusion Torpedo

Descriptive: The Mark I Confusion Torpedo uses inertial guidance and an intelligence sensing homing device to track the target. Especially effective against aggressive opponents strongly convinced of their divine right of superiority. Its warhead consists of a powerful psychological burst of panic, confusion, horror and dismay that affects all forms of life.

Designation: • (colon) as in 5/CA.12•, 10/CS.85•, 8/S.6ad|rd|hd|md|td|•, etc.

Prerequisite: None

Development Cost: 80 MT (only 30 MT if TA-320 Mark I Homing Torpedo has been developed).

Item Cost: 4 MT per torp/tube – May be mounted on any ship with 1 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90). Empty tubes are destroyed first.

Narrative: A ship carries 1 Mark I Confusion Torpedo for each gun on the ship (TA-117 Double-Gun Warships carry 1 torpedo per long gun). The Mark I has a range of 30. The attack factor is a psychological burst of panic, confusion, horror and dismay that causes the target ship to go into full defensive mode (guns and TAs) the next turn on the battle board. Full defensive mode means that the victim will put all remaining guns to defense, use no torpedoes, and activate all deflectors and deception devices.

The torpedo has a contact fuse and will explode if it hits:

- Any planet, moon, ring or radiation belt
- A *targeted* ship (it will travel *through* an untargeted ship)
- TA-340 series Asteroid Torpedo already in place

The Confusion Torpedo has a significant failure rate determined by a die roll as follows:

- 1, 2, 3 = Miss
- 4, 5, 6 = Hit (roll again for effectiveness of TA-223-225 Torpedo Interceptor. TA-220-222 Torpedo Deflector is ineffective against the Confusion Torpedo.)

The torpedo must travel at least 2 movement factors before it is armed and able to explode. It can be used against any ship capable of movement.

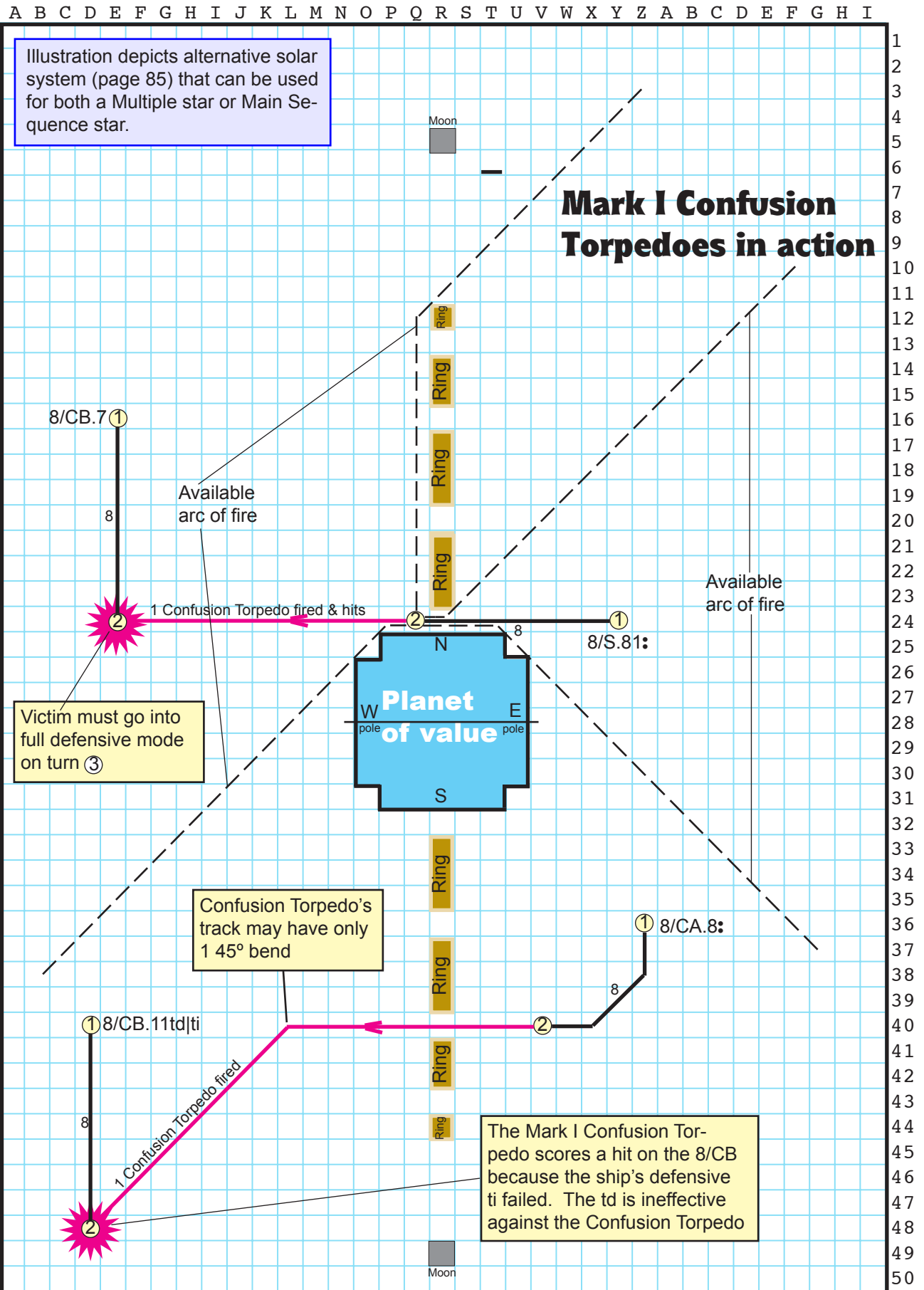
A warship may fire as many as 2 Mark I Confusion Torpedoes per battle board round, but only 1 per target. The torpedoes are fired after ship movement on the battle board is complete. See sequence of events chart on page 93. The Confusion Torpedo has the same angle of fire as a gun, i.e., only one 45° bend is allowed. Like gunfire, the exact course the Confusion Torpedo follows to the target is not plotted.

A Confusion Torpedo may not be used to knock a ship out of pre-warp. However, a Confusion Torpedo *will* home in on, but fail to explode on any of the Group V TAs that project false ship profiles.

Torpedo reloads are available only at a friendly production center star. Each Mark I Confusion Torpedo reload is free. No time is required to reload, just warp in, warp out and consider it done. A ship cannot transfer torpedoes to another ship.

A ship can carry only one type of torpedo.

The illustration on the next page depicts how this torpedo functions.



TA-381 Mark II Confusion Torpedo

Descriptive: Same as TA-320 Mark I Confusion Torpedo.

Designation: :: (colon) as in 5/CA.12::, 10/CS.85::, 8/S.6ad|rd|hd|md|td|::, etc.

Prerequisite: TA-380 Mark I Confusion Torpedo

Development Cost: 4 MT

Item Cost: 4 MT per gun – Must be mounted on a ship with 1 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark II are the same as the Mark I except that the range is increased to 34.

There is no automatic upgrading of existing Mark I's after the Mark II has been developed. A ship with Mark I's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-382 Mark III Confusion Torpedo

Descriptive: Same as TA-320 Mark I Confusion Torpedo.

Designation: ::: (colon) as in 5/CA.12:::, 10/CS.85:::, 8/S.6ad|rd|hd|md|td|:::, etc.

Prerequisite: TA-321 Mark II Confusion Torpedo

Development Cost: 4 MT

Item Cost: 4 MT per gun – Must be mounted on a ship with 2 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark III are the same as the Mark II except that the range is increased to 38.

There is no automatic upgrading of existing Mark II's after the Mark III has been developed. A ship with Mark II's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required. Ship size requirement must be respected.

TA-383 Mark IV Confusion Torpedo

Descriptive: Same as TA-320 Mark I Confusion Torpedo.

Designation: :::: (colon) as in 5/CA.12::::, 10/CS.85::::, a8/S.6ad|rd|md|td|::::, etc.

Prerequisite: TA-322 Mark III Confusion Torpedo

Development Cost: 30 MT

Item Cost: 4 MT per gun – Must be mounted on a ship with 3 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark IV are the same as the Mark III except that the attack factor is increased to force the victim into full defensive mode for the next 2 turns on the battle board.

There is no automatic upgrading of existing Mark III's after the Mark IV has been developed. A ship with Mark III's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-390 Mark I Dislocation Torpedo

Descriptive: The Mark I Dislocation Torpedo uses inertial guidance to travel in a straight line toward the target. Its warhead consists of a reality distortion field invented by a pimply-faced teenage computer geek in a dilapidated one-car garage using an ancient Apple IIe computer. The field instantly moves a warship to another location on the battle board.

Designation: ^ (shift 6) as in 5/CA.12^, 10/CS.85^, 8/S.6ad|rd|hd|md|^, etc.

Prerequisite: None

Development Cost: 100 MT

Item Cost: 4 MT per torp/tube – Must be mounted on any warship with 1 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90). Empty tubes are destroyed first.

Narrative: A ship carries 1 Mark I Dislocation Torpedo for each gun on the ship (TA-117 Double-Gun Warships carry 1 torpedo per long gun).

The Mark I travels along a straight line in any one of the 8 possible directions until it reaches range of 30 in 1 move. The torpedo has a proximity fuse and will explode when it comes within 1 square of “something” or at the end of its run. It has a dislocation effect in the 8 squares around the exact location of the torpedo blast. The torpedo must travel at least 4 movement factors before it is armed and able to explode.

Here is what qualifies as “something” to explode the Dislocation Torpedo:

- An approaching Unguided Torpedo of any mark
- Any celestial object, such as a planet, ring, radiation burst, etc.
- Any ship (enemy or friendly)
- TA-221 Torpedo Interceptor (roll die for effectiveness of ti, page 155)
- TA-340 series Asteroid Torpedo already in place

A ship may fire all or some portion of its complement of Dislocation Torpedoes per target, but only 1 hit on the target will be scored. The target may fire its own Dislocation or Unguided Torpedos, if it has any, in defense. Equal numbers of opposing torpedos will cancel. The ship that fired the most torpedos will get 1 hit on its opponent regardless of the number fired. Examples: 7/CA.32^ fires 6 of its complement of 8 torpedos and the opposing 5/S.63sd|td|ti|*** fires 4 Mark III Unguided Torpedoes, the CA will get 1 hit on the S. If the S had fired all 9 of its torpedoes, it would have gotten 1 hit on the CA.

Here is what happens to objects within the Dislocation Torpedo’s blast pattern:

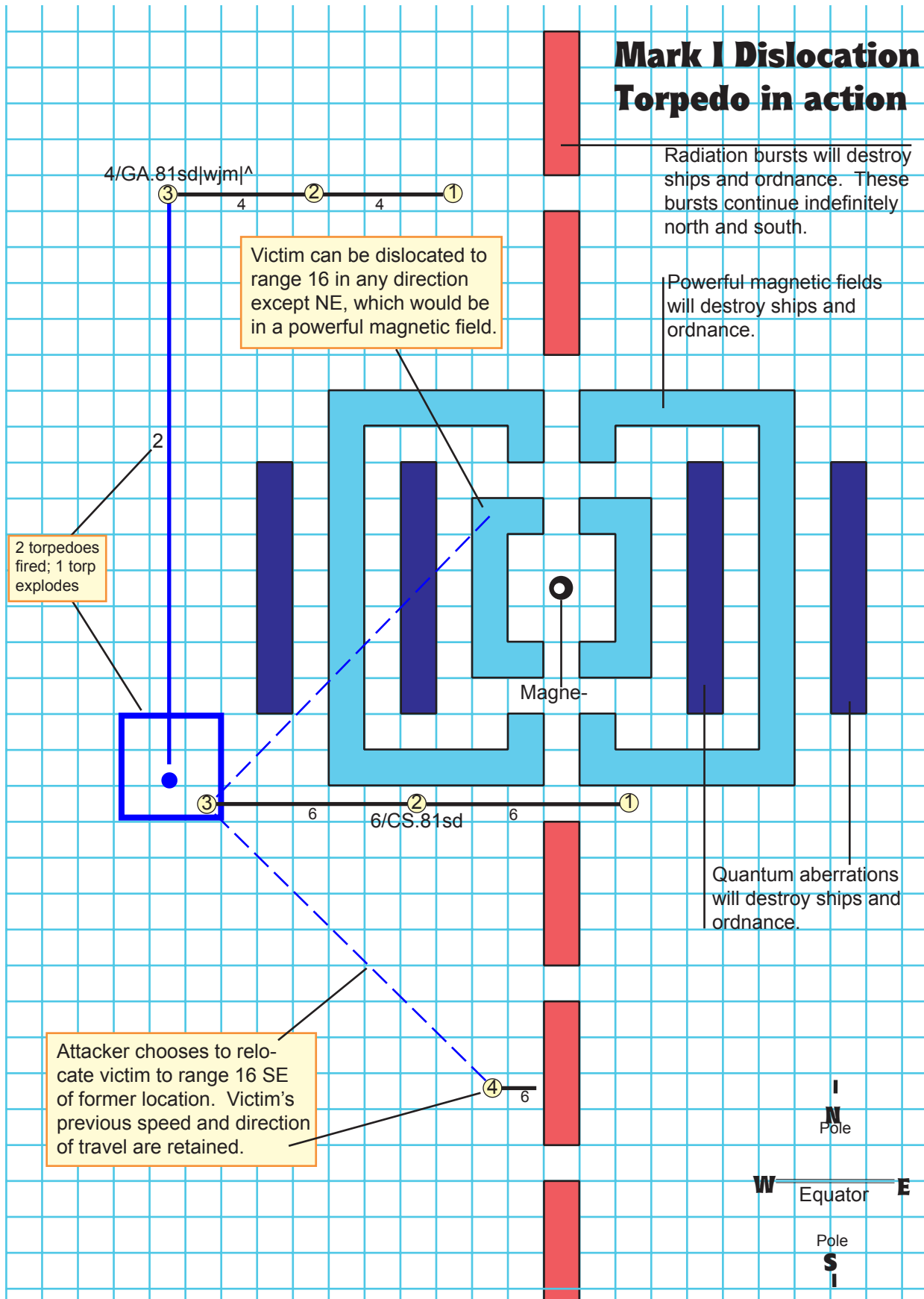
• Any ship(s) – Victim placed (after damage computations) at range 16 N, NE, E, SE, S, SW, W or NW (attacker’s choice) of present location. Victim may be hopped to other side of natural hazards. Victim may not be destroyed or jeopardized by relocation into or next to celestial object; reposition as necessary. Victim retains previous speed and course. Illustration, next page.

- TA-340 Asteroid Torpedo already in place – the asteroid vanishes.
- Neutron Star, Dead Dwarf, planet, moon, ring, magnetic field, quantum aberrations or radiation belts/pulses/bursts – nothing.

The torpedo is fired after ship movement on the battle board is complete.

Free torpedo reloads are available only at a friendly production center star. No time is required to reload, just warp in, warp out and consider it done. A ship cannot transfer torpedoes to another ship. A ship may carry only 1 type of torpedo.

Mark I Dislocation Torpedo in action



TA-391 Mark II Dislocation Torpedo

Descriptive: Same as TA-390 Mark I Dislocation Torpedo.

Designation: ^^ as in 5/CA.12^^, 10/CS.85^^, 8/S.6ad|rd|hd|md|td|^, etc.

Prerequisite: TA-390 Mark I Dislocation Torpedo

Development Cost: 10 MT

Item Cost: 4 MT per torp/tube – Must be mounted on any warship with 1 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark II are the same as the Mark I except that the torpedo's range is increased to 34 and the distance a victim is dislocated is raised to 22 in any of 8 directions (attacker's choice).

There is no automatic upgrading of existing Mark I's after the Mark II has been developed. A ship with Mark I's or earlier must warp into and out of a friendly production center star, after which the torpedoes are deemed upgraded at no cost. No stopping time required.

TA-392 Mark III Dislocation Torpedo

Descriptive: Same as TA-390 Mark I Dislocation Torpedo.

Designation: ^^^ as in 5/CA.12^^^, 10/CS.85^^^, 8/S.6ad|rd|hd|md|td|^, etc.

Prerequisite: TA-391 Mark II Dislocation Torpedo

Development Cost: 20 MT

Item Cost: 4 MT per torp/tube – Must be mounted on a ship with 1 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark III are the same as the Mark II except that the torpedo's range is increased to 38 and the distance a victim is dislocated is raised to 30 in any of 8 directions (attacker's choice).

There is no automatic upgrading of existing Mark II's after the Mark III has been developed. A ship with Mark II's or earlier must warp into and out of a friendly production center star, after which the torpedoes are deemed upgraded at no cost. No stopping time required.

TA-393 Mark IV Dislocation Torpedo

Descriptive: Same as TA-390 Mark I Dislocation Torpedo.

Designation: ^^^^ as in 5/CA.12^^^^, 10/CS.85^^^^, a8/S.6ad|rd|md|td|^, etc.

Prerequisite: TA-392 Mark III Dislocation Torpedo

Development Cost: 30 MT

Item Cost: 4 MT per torp/tube – Must be mounted on a ship with 1 to 10 guns.

When inoperable: Torpedo tubes are destroyed along with guns (page 90).

Narrative: The operational characteristics of the Mark IV are the same as the Mark III except that the distance a victim is dislocated is raised to 40 in any of 8 directions (attacker's choice) and the TAs 223-226 Torpedo Interceptor function is ineffective.

There is no automatic upgrading of existing Mark III's after the Mark IV has been developed. A ship with Mark III's or earlier must warp into and out of a friendly production center star, after which the torpedoes are considered upgraded at no cost. No stopping time is required.

TA-399 Dislocation Torpedo Shield

Descriptive: The Dislocation Torpedo Shield protects a warship against the effects of the Dislocation Torpedo.

Designation: (^) as in 5/Z.12(^), 10/CS.85(^) or 8/S.6ad|rd|td|^^^^(^), etc.

Prerequisite: TA-390 Mark I Dislocation Torpedo

Development Cost: 50 MT

Item Cost: 8 MT Limited to ship with 5 or more guns.

When inoperable: As per damage chart on page 90.

Narrative: The Dislocation Torpedo Shield completely protects a ship against the effects of all marks of the Dislocation Torpedo.

TA-400 Mark I White Hole Torpedo

Descriptive: The Mark I White Hole Torpedo uses inertial guidance to travel in a straight line toward the target. Its warhead consists of a short-term white hole that instantly transports a ship 1 star chart square (1 parsec) away from a battle.

Designation: x as in 10/CU.12x, 10/DD.86ad|rd|hd|md|x, 7/CA.6ad|rd|x, etc. The number of torpedoes actually on board should be noted separately if less than a full complement.

Prerequisite: None

Development Cost: 100 MT

Item Cost: 8 MT per torpedo – Must be mounted on a warship that has 4 or 8 guns and is limited specifically to the CU, DD or CA listed on page 88 or to the TA-116 Raider (p. 131).

When inoperable: All White Hole Torpedoes, regardless of mark and number on board, are destroyed as a single TA (page 90).

Narrative: A ship carries 1 Mark I White Hole Torpedo for each 4 guns on the ship and is limited specifically to the CU, DD or CA listed on page 88 and to the TA-116 Raider on page 131. The torpedo is fired along any one of the 8 directions available to a range of 20.

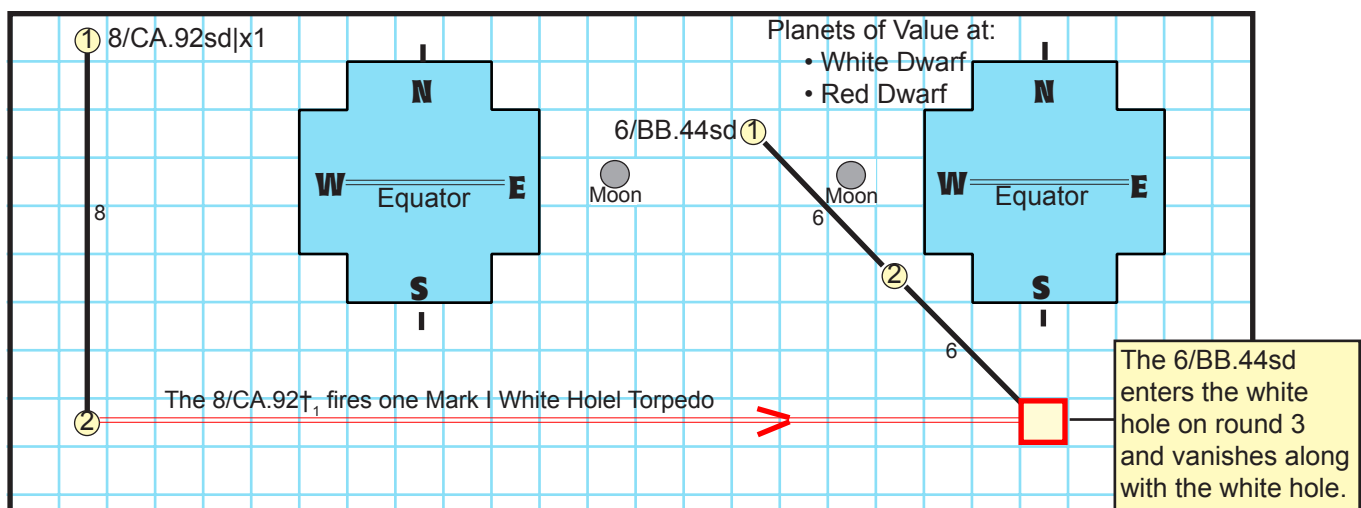
The Mark I creates a white hole effect in a single square on the battle board. This square may not contain a ship or celestial object. Any 1-gun ship or larger that subsequently enters the torpedo's white hole makes the white hole vanish. The ship that enters the white hole is instantly transported to a previously undiscovered rogue moon that is located in the first open deep space star chart square east of the star at which the confrontation took place.

The torpedo must travel at least 2 movement factors before it is armed and able to create the white hole. The torpedo is fired after ship movement on the battle board is complete. See sequence of events chart on page 93. A Heavy Cruiser (CA) (page 88) may fire both Mark I White Hole Torpedoes in 1 turn, but not at the same target.

If 2 ships seek to enter the white hole on the same battle board turn, they are destroyed and the white hole vanishes. A transported ship is subsequently lost if it does not have warp drive, such as the TA-122 Solar System Defense Ship (page 134), the 1-gun Light Scout and 2-gun Heavy Scout discussed with TAs 140-143 (pages 135-137) and the TA-190 Heliostatic Hellfire Machine (page 143). A ship that does have warp drive may begin normal movement the first year of the Cycom following the battle.

No White Hole Torpedo of any mark has any effect on a ship in pre-warp.

Torpedo reloads are available only at a friendly production center star. Each Mark I White Hole Torpedo reload is free. No time is required to reload, just warp in, warp out and consider it done. A ship cannot transfer torpedoes to another ship



TA-401 Mark II White Hole Torpedo

Descriptive: See TA-400 Mark I White Hole Torpedo.

Designation: xx as in 10/CU.12xx, 10/DD.86ad|rd|hd|md|xx, 7/CA.6ad|rd|xx, etc.

Prerequisite: TA-400 Mark I White Hole Torpedo

Development Cost: 8 MT

Item Cost: 8 MT per torpedo – Must be mounted a warship that has 4 or 8 guns and is limited specifically to the CU, DD or CA listed on page 88 or to TA-116 Raider (page 131.)

When inoperable: All White Hole Torpedoes, regardless of mark and number on board, are destroyed as a single TA (page 90).

Narrative: The Mark II is identical to the Mark I, except that range is increased to 40.

TA-402 Mark III White Hole Torpedo

Descriptive: See TA-400 Mark I White Hole Torpedo.

Designation: xxx as in 10/CU.12xxx, 10/DD.86ad|rd|hd|md|xxx, 7/CA.6ad|rd|xxx

Prerequisite: TA-401 Mark II White Hole Torpedo

Development Cost: 40 MT

Item Cost: 8 MT per torpedo – Must be mounted a warship that has 4 or 8 guns and is limited specifically to the CU, DD or CA listed on page 88 or to TA-116 Raider (page 131.)

When inoperable: All White Hole Torpedes, regardless of mark and number on board, are destroyed as a single TA (page 90).

Narrative: The Mark III is identical to the Mark II, except that the white hole stays on the battle board until the end of the year regardless of the number of ships that use it. Any number of ships may use the white hole, even simultaneously without risk of collision.

The ships that enter the white hole are instantly transported to a previously undiscovered rogue moon that is located in the first open deep space star chart square east of the star at which the confrontation took place. The ships are placed about the “planet of value” as per the rules for warping in on page 81. The rogue moon is the same size (4 squares) as a Main Sequence star’s Moon 1 depicted on page 75.

If the ships placed about the rogue moon wish to continue hostilities, they may do so.

TA-403 Mark IV White Hole Torpedo

Descriptive: The Mark IV White Hole Torpedo uses inertial guidance and a sentence sensing homing device to find the target. Its warhead consists of a short-term white hole that instantly transports a ship 1 star chart square (1 parsec) away from a battle. The only torpedo that can be intentionally fired at a friendly ship.

Designation: xxxx as in 10/CU.12xxxx, 10/DD.86ad|rd|hd|md|xxxx, 7/DR.6ad|rd|xxxx, etc. The number of torpedoes actually on board should be noted separately if less than a full complement.

Prerequisite: TA-402 Mark III White Hole Torpedo

Development Cost: 100 MT

Item Cost: 8 MT per torpedo – Must be mounted a warship that has 4, 8 or 12 guns and is limited specifically to the CU, DD, CA or DR listed on page 88 or TA-116 Raider (pg.131).

When inoperable: All Time White Hole Torpedo tubes, regardless of mark and number on board, are destroyed as a single TA (page 90).

Narrative: A ship carries 1 Mark IV White Hole Torpedo for each 4 guns on the ship and is limited specifically to the CU, DD, CA or DR listed on page 88. The Mark IV has the same angle of fire as a gun, i.e., only one 45° bend is allowed, out to range 32. Like gunfire, the exact course the Mark IV follows to the target is not plotted. A ship may fire all of its Mark IV White Hole Torpedoes in a single turn, but each must be aimed at a different target.

The Mark IV creates a 1-turn white hole effect around the target ship that encompasses a single square on the battle board. The ship that enters the white hole is instantly transported to a previously undiscovered rogue moon that is located in the first open deep space star chart square east of the star at which the confrontation took place. The white hole vanishes at the end of the battle board turn along with the target ship.

The torpedo must travel at least 2 movement factors before it is armed and able to create the white hole around the target ship. The torpedo is fired after ship movement on the battle board is complete. See sequence of events chart on page 93.

The Mark IV has a 50% chance of homing in on its target: Die roll 1, 2, 3 = hit
4, 5, 6 = miss

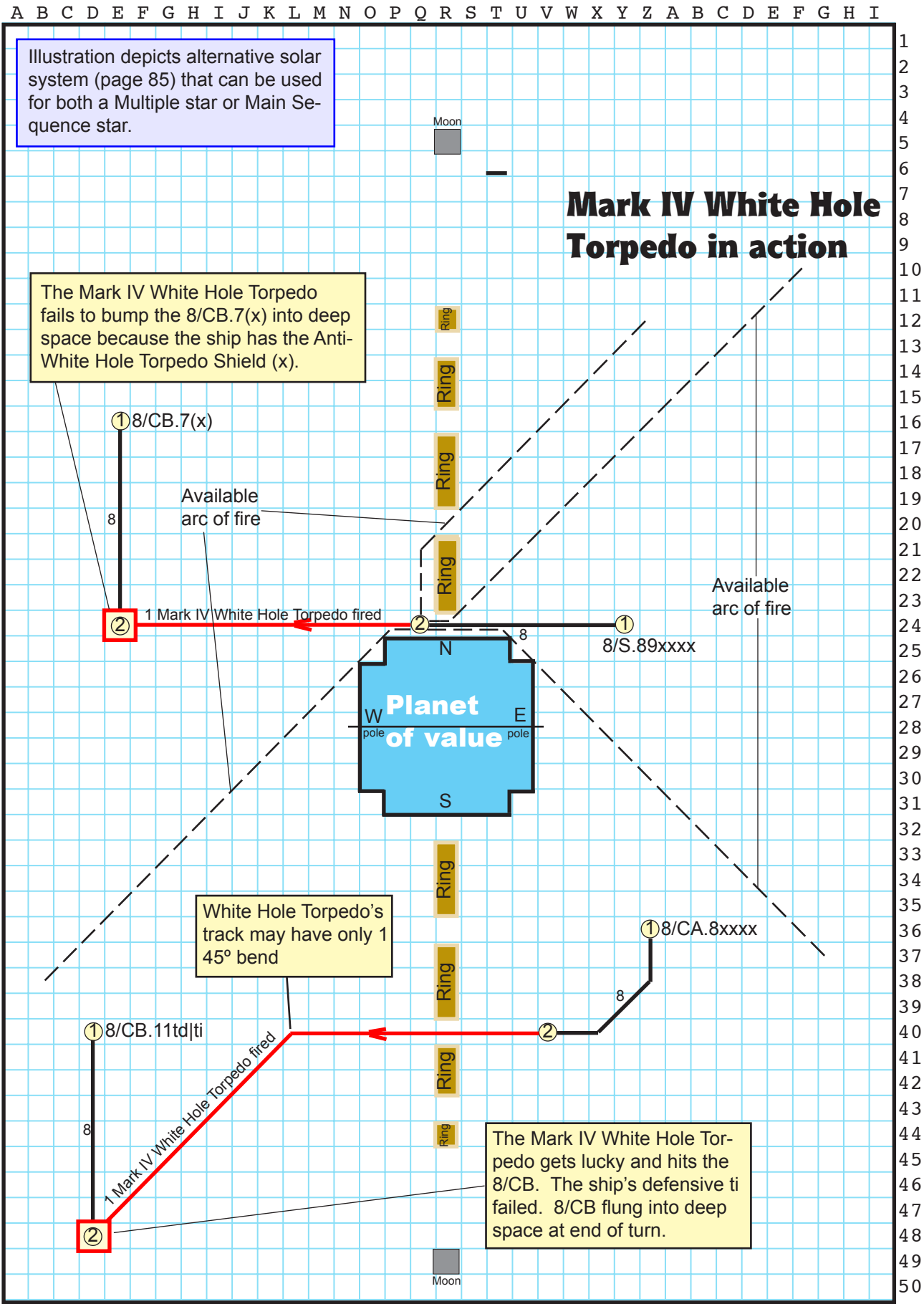
Roll again for effectiveness of TAs 223-226 Torpedo Interceptors (page 155).

The target may not be a celestial object, such as a moon or magnetic field. The ship that is hit by the Mark IV White Hole Torpedo is instantly transported to a previously undiscovered rogue moon that is located in the first open deep space star chart square east of the star at which the confrontation took place. A ship *cannot* be transported if it does not have warp drive, such as the TA-122 Solar System Defense Ship (page 134), the 1-gun Light Scout and 2-gun Heavy Scout discussed with TAs 140-143 (pages 135-137) and the TA-190 Helostatic Hellfire Machine (page 143). A ship that does have warp drive may begin normal movement the first year of the Cycom following the battle.

An illustration of this torpedo in action is on the next page.

No White Hole Torpedo of any mark has any effect on a ship in pre-warp. However, a Mark IV White Hole Torpedo *will* home in on, but fail to explode on any of the Group V TAs that project false ship profiles.

Torpedo reloads are available only at a friendly production center star. Each Mark IV White Hole Torpedo reload is free. No time is required to reload, just warp in, warp out and consider it done. A ship cannot transfer torpedoes to another ship.



TA-404 Mark V White Hole Torpedo

Descriptive: Same as for the Mark IV White Hole Torpedo.

Designation: xxxxx as in 10/CU.12xxxxx, 10/DD.86ad|rd|hd|md|xxxxx, 7/DR.6ad|rd|xxxxx, etc. The number of torpedoes actually on board should be noted separately if less than a full complement.

Prerequisite: TA-403 Mark IV White Hole Torpedo

Development Cost: 8 MT

Item Cost: 8 MT per torpedo – Must be mounted a warship that has 4, 8 or 12 guns and is limited specifically to the CU, DD, CA or DR listed on page 88 or to TA-116 Raider (page 131).

When inoperable: All White Hole Torpedoes, regardless of mark and number on board, are destroyed as a single TA (page 90).

Narrative: Exactly the same operational characteristics as the Mark IV, except that the range is increased to 40.

TA-405 Mark VI White Hole Torpedo

Descriptive: Same as for the Mark IV White Hole Torpedo.

Designation: xxxxxx as in 10/CU.12xxxxxx, 10/DD.86ad|rd|hd|md|xxxxxx, 7/DR.6ad|rd|xxxxxx, etc. The number of torpedoes actually on board should be noted separately if less than a full complement.

Prerequisite: TA-404 Mark V White Hole Torpedo

Development Cost: 20 MT

Item Cost: 8 MT per torpedo – Must be mounted a warship that has 8 or 12 guns and is limited specifically to the CA or DR listed on page 88 or to TA-116 Raider, 9-gun RRR only (page 131).

When inoperable: All White Hole Torpedoes, regardless of mark and number on board, are destroyed as a single TA (page 90).

Narrative: Exactly the same operational characteristics as the Mark V, except that all of a warship's complement of Mark VI White Hole Torpedoes may be fired at a single target.

TA-409 White Hole Torpedo Shield

Descriptive: The White Hole Torpedo Shield protects a ship against the effects of a White Hole Torpedo of any mark.

Designation: (x) as in 10/CU.12(x), 10/DD.86ad|rd|hd|md|(x), 7/DR.6ad|rd|(x), etc.

Prerequisite: None (you do not need the White Hole torpedo of any mark to develop this TA).

Development Cost: 20 MT

Item Cost: 4 MT – Must be mounted on a ship having 5 or more guns.

When inoperable: Destroyed as a TA according to damage table on page 90.

Narrative: Provides 100% protection for a ship against the effects of any mark of White Hole Torpedo. A ship carrying the (x) can turn off the shield at any time.

TA-410 Mark I Time Stasis Torpedo

Descriptive: The Mark I Time Stasis Torpedo uses inertial guidance to travel in a straight line along any of the 8 directions toward the target. Its warhead consists of a time-stasis field that freezes unharmed a warship in place until the fourth year of the Cycom following the hit.

Designation: † (option t) as in 5/CU.12†, 10/DD.85†, etc.

Prerequisite: None

Development Cost: 100 MT

Item Cost: 4 MT per torpedo – Only 1 torpedo carried for every 4 guns. The Mark I is limited specifically to the CU or DD listed on page 88.

When inoperable: All Time Stasis Torpedoes, regardless of mark and number on board, are destroyed as a single TA (page 90).

Narrative: A ship carries 1 Mark I Time Stasis Torpedo for each 4 guns on the ship and is limited specifically to the CU or DD listed on page 88. The torpedo is fired along any one of the 8 directions available to a range of 38.

The torpedo has a proximity fuse and will “explode” the instant it comes anywhere along its course within 1 square of:

- A celestial object, such as a planet, moon, dead dwarf, dust ring, magnetic field, radiation burst, etc., which neutralizes the torpedo and prevents a time stasis effect.
- Any ship (enemy or friendly)
- TAs 223-226 Torpedo Interceptors (page 155)
- TA-340 series Asteroid Torpedo already in place
- No other torpedo affects the Time Stasis Torpedo
- The Time Stasis Torpedo has no effect on a ship in pre-warp.

The Mark I creates a time stasis effect in a 3 x 3 pattern centered around the point of “blast” on the battle board. The torpedo must travel at least 4 movement factors before it is armed. The torpedo is fired after ship movement on the battle board is complete. See sequence of events chart on page 93.

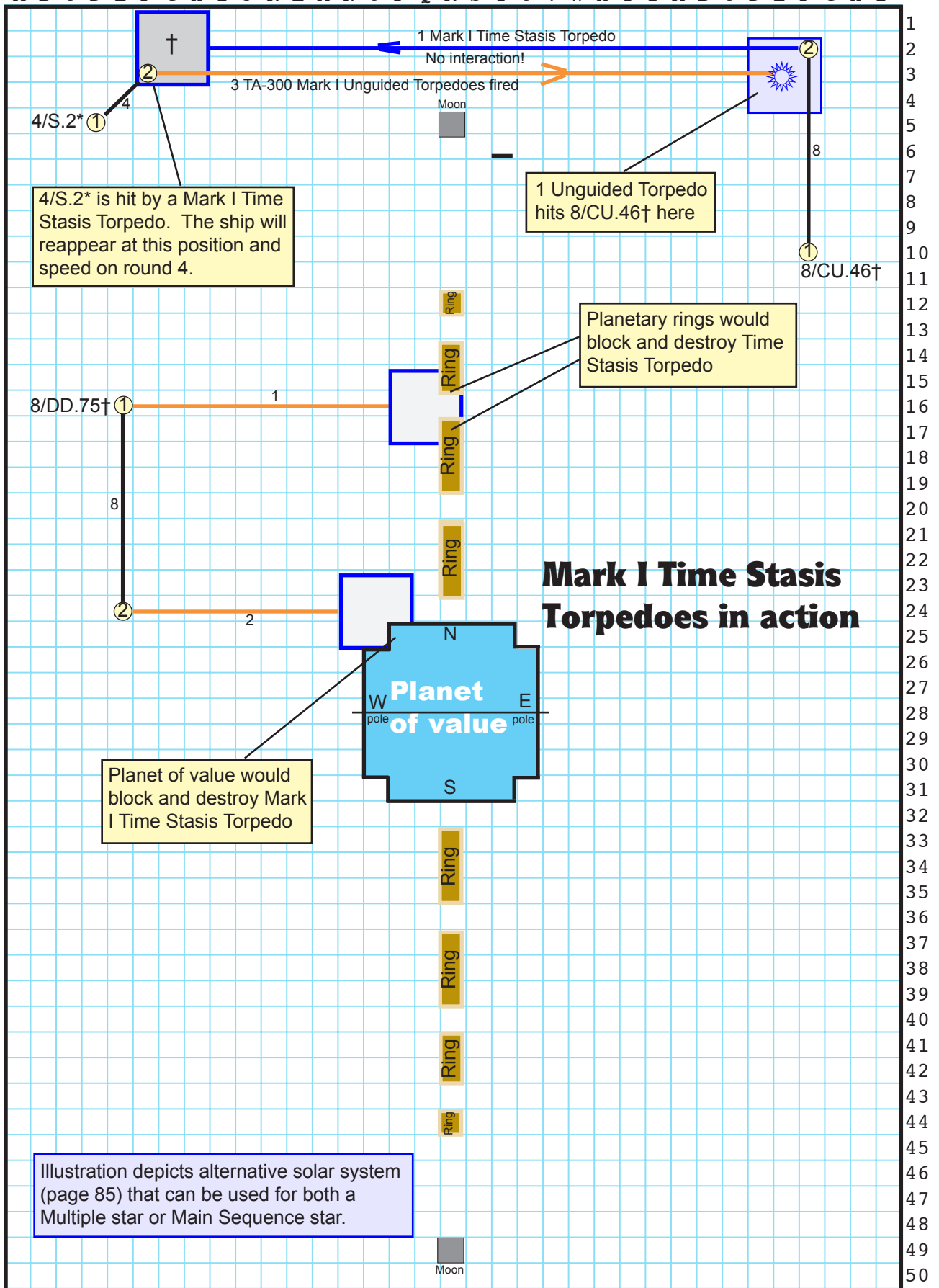
Any ship that is hit by the Mark I Time Stasis Torpedo is locked in an unmoving time stasis for 1 move on the battle board (the next move). The targeted ship cannot move, fire guns or use any TAs. The ship and its time stasis field are a “hard” phantom that must be avoided by weapons and ships much as a moon. The ship is invulnerable to any attack or collision (the collidEE is unharmed, the collider is destroyed).

A ship freed from a time stasis field resumes its former speed and direction of travel.

Torpedo reloads are available only at a friendly production center star. Each Mark I Time Stasis Torpedo reload is free. No time is required to reload, just warp in, warp out and consider it done. A ship cannot transfer torpedoes to another ship.

A ship may carry only one type of torpedo.

The illustration on the next page depicts how this torpedo functions.



TA-411 Mark II Time Stasis Torpedo

Descriptive: Same as the Mark I.

Designation: †† (option tt) as in 5/CU.12††, 10/DD.85††, etc.

Prerequisite: TA-410 Mark I Time Stasis Torpedo

Development Cost: 4 MT

Item Cost: 4 MT per torpedo – Only 1 torpedo carried for every 4 guns. The Mark II is limited specifically to the CU or DD listed on page 88.

When inoperable: All Time Stasis Torpedoes, regardless of mark and number on board, are destroyed as a single TA (page 90).

Narrative: Same as the Mark I, except that the target's time stasis lasts for 2 moves.

TA-412 Mark III Time Stasis Torpedo

Descriptive: Same as the Mark I.

Designation: ††† (option ttt) as in 5/CU.12†††, 10/DD.85†††, etc.

Prerequisite: TA-411 Mark II Time Stasis Torpedo

Development Cost: 4 MT

Item Cost: 4 MT per torpedo – Only 1 torpedo carried for every 4 guns. The Mark II is limited specifically to the CU or DD listed on page 88.

When inoperable: All Time Stasis Torpedoes, regardless of mark and number on board, are destroyed as a single TA (page 90).

Narrative: Same as the Mark II, except that the target's time stasis lasts for 3 moves.

TA-413 Mark IV Time Stasis Torpedo

Descriptive: Same as the Mark I.

Designation: †††† (option tttt) as in 5/CU.12††††, 10/DD.85††††, etc.

Prerequisite: TA-412 Mark III Time Stasis Torpedo

Development Cost: 8 MT

Item Cost: 4 MT per torpedo – Only 1 torpedo carried for every 4 guns. The Mark II is limited specifically to the CU, DD, CA and DR listed on page 88 or to TA-116 Raider, p.131.

When inoperable: All Time Stasis Torpedoes, regardless of mark and number on board, are destroyed as a single TA (page 90).

Narrative: Same as the Mark III, except that the the target's time stasis lasts 4 moves. The 8-gun CA, 12-gun DR (both page 88) and TA-116 Raider (page 131) can carry the ††††.

TA-419 Time Stasis Torpedo Shield

Descriptive: Neutralizes all marks of Time Stasis Torpedo.

Designation: (†) (option t) as in 9/CS.92(†), 6/Z.85(†), 7/DA.113(†), etc.

Prerequisite: TA-410 Mark I Time Stasis Torpedo

Development Cost: 20 MT

Item Cost: 4 MT – Can be carried by any 5-gun warship and larger.

When inoperable: Destroyed as a TA (page 90).

Narrative: A ship carrying the (†) has 100% protection against the Time Stasis Torpedo.

TA-490 Torpedo Gatling (Rapid-Fire Mechanism)

Descriptive: The Torpedo Gatling (Rapid-Fire Mechanism) allows a ship to fire multiple torpedoes at one target during the same battle board round. This TA enhances the effectiveness of certain types of torpedoes against various defensive measures, such as the TA-220 series of Torpedo Deflector, TA-223 series of Torpedo Interceptor, TA-500 Hallucination Projector and others.

Designation: tg as in jjjj | zz8/CA.44.....tg | ad | rd | hd | md | td | rf | rl, etc., the tg designation is placed immediately after the torpedo's designation without the dividing vertical line (|) that is normally used to separate TA acronyms.

Prerequisite: Any mark of any torpedo listed below.

Development Cost: 50 MT. Not available for development until third Katun.

Item Cost: Doubles cost of ship's torpedo suite

When inoperable: Mounted as separate TA that is lost as per damage chart (page 90).

Narrative: The Torpedo Gatling (tg) works with certain torpedoes to allow multiple shots at 1 target during a single battle board round. The attack factor of all torpedo hits on a single target are combined to form a single attack factor (page 90). A ship can fire as many torpedoes as it carries at a single target.

The tg can be paired with the following torpedoes:

- Unguided Torpedo, TA-300 series, all marks, including Torpilleur Capability
- Homing Torpedo, TA-320 series, all marks, including Torpilleur Capability
- Toss Torpedo, TA-330 series, all marks, including Torpilleur Capability. Allows multiple torpedoes to be aimed along same track so that target may be attacked multiple times.
- Confusion Torpedo, TA-380 series, all marks. Only 1 hit counts.
- Dislocation Torpedo, TA-390 series, all marks. Only 1 hit counts.
- Time Stasis Torpedo, TA-410 series, all marks. Only 1 hit counts.

The tg can be mounted on an existing warship by warping in and out of a production-center star. No time delay; just pay the cost.

Chapter 13



Group V

Deception Devices



Group V – Deception Devices

TA-499a

to

TA-499zz Ambush Drives – a to zz – 100 MT (Mark I), 30 MT (later marks)

TA-500a to TA-500z Hallucination Projector – hp – 100 MT (Mark I), 30 MT (later marks)

TA-501

TA-502

TA-503

TA-504

TA-505

TA-506

TA-507

TA-508

TA-509

TA-510

TA-512

TA-513

TA-514

TA-515

TA-516

TA-517

TA-518

TA-519

TA-520

TA-521

TA-522

etc.

TA-600 Mark I Sub-Warp Drive – i – 100 MT

TA-601 Mark II Sub-Warp Drive – ii – 100 MT

TA-602 Mark III Sub-Warp Drive – iii – 100 MT

TA-603 Mark IV Sub-Warp Drive – iiij – 100 MT

TA-604 Mark V Sub-Warp Drive – iiijj – 100 MT

TA-605 Mark VI Sub-Warp Drive – iiij | iij – 100 MT

TA-606g to TA-606z Sub-Warp Drive – igj through izj – 100 MT (igj), 30 MT (jhj and later)

TA-607

TA-608

TA-609

TA-499a to 499zz Ambush Drives

Descriptive: An Ambush Drive is a highly specialized auxiliary engine fitted to a ship that gives it marginal speed superiority in an extended chase over a ship with a lesser mark. The Ambush Drive also allows a ship to burrow into a planet's or moon's crustal surface and lie in ambush. There are 52 marks of Ambush Drives. Each provides a slight extended chase speed enhancement over the previous mark.

Designation: a, b, c to x, y, z and aa, bb, cc to xx, yy, zz as in a5/Z.12*, b10/CS.85*, ww8/S.6*, etc.

Prerequisite: Marks must be developed in sequence, no more than 1 per Cycom, a through z and aa through zz.

Development Cost: 100 MT for the Mark I and 30 MT each for later marks.

Item Cost: 1 MT per gun on the parent ship; limited to ship with 5 *short* guns or larger with the exception that it may be mounted on a TA-102 Mark II Hyggyns Mining Ship (page 127). A ship upgraded to a larger size must pay the difference. Must be on a ship with warp drive which excludes TA-122 Solar System Defense Ship (page 134).

When inoperable: Counts as a TA as per damage chart on page 90.

Narrative: The ship mounting the highest mark of Ambush Drive will be the fastest in an extended chase. See Extended Chase entry at the bottom of page 83.

These booster engines also enable a ship to burrow beneath the surface of a moon or the planet of value of a friendly colonized star or an uncolonized star, and lie in wait for prey to warp in. The act of burrowing takes place immediately after warp in and may not be done if enemy forces are present. The ship with ambush drive has the option of bursting from beneath the surface of the moon or planet and conducting a surprise attack. The ship always bursts forth at maximum speed from the outer surface of the planet or moon and in a direction of its choosing. There is no known way for an enemy to detect a ship on ambush.

A ship may leap from ambush at any time if friendly, non-ambush forces are present. Friendly includes a colonized planet of value. The ambush ship gets a full report of enemy ships and positions as long as any defenders, including a GU, survive on the battle board.

The ship on ambush is not told the nature of the enemy force warping into that star unless there are other friendly forces present that are not in ambush mode. The ship's owner either decides to attack or not attack based on the warp ripple report. If the decision is to attack, the player warping in will deploy his forces with due caution, but not be allowed to retreat and/or depart. The entering force must attempt to carry out its mission.

If the decision is to attack, the ambush ship will attack when any enemy ship (including TA-50 Goodie Unit Cargo Shuttle, page 118) approaches to range 20 or less of the planet of value or moon. A ship that leaves ambush cannot return to ambush until the following year.

A ship on ambush is *not* destroyed if it remains in its lair after enemy neutralization, colonization or buildup of that star. Note that a ship cannot enter ambush mode at an enemy colonized star.

The number of ships of any size that may be on ambush is as follows:

- 16 – Each planet of value (pages 74 and 75)
- 4 – Big moon (4 squares on battle board, middle of page 75)
- 1 – Each small moon (1 square on battle board, pages 74 and 75)

Later drives may replace earlier drives, as per upgrading rules on page 100. The old drive is discarded or moved to another ship if that other ship is present during the upgrade. Pay cost difference, if necessary. A ship on ambush cannot be upgraded.

TA-500a to 500y Hallucination Projector

Descriptive: The Hallucination Projector projects an imperfect mirror image of the parent ship. An enemy ship will know one of the “ships” is a hallucination of no substance, but cannot determine the real ship half of the time. There are 25 marks.

Designation: hpa, hpb, hpc through hpw, hpx, hpy as in 5/Z.12hpy, 10/BB.85hpc or 8/P.6hpf|ad|rd|td, etc.

Prerequisite: None

Development Cost: 100 MT for the Mark I (hpa) and 30 MT each for later marks (hpc through hpy). Must be developed in order.

Item Cost: 16 MT Limited to warship with 9 guns or larger.

When inoperable: As per damage chart on page 90.

Narrative: The hp projects an imperfect mirror image of the parent ship to range 0 on the battle board. Both “ships” will appear to be in the same battle board square, thus revealing the fact that one of the “ships” is a hallucination. The hallucination can warp in with the parent ship. The ship has the option of not using the hallucination. For a ship that is using its Hallucination Projector, an “hp” notation must be made beside the ship when it moves on the battle board. A similar notation must be made on the “Next Move” entry of the ship’s Battle Record (page 91).

A ship using the hp will find that enemy gunfire misses half of the time:

Die roll: 1, 2, 3 = Miss 4, 5, 6 = Hit (proceed to hits table on page 90)

The Hallucination Projector is effective against gunfire, including TA-180 Plasma Gun Warship (page 142). Ineffective against all other weapons.

The hp identifies and nullifies the effectiveness of enemy hp’s at any range as long as the enemy hp is of an equal or lesser mark. This ability to penetrate an enemy hallucination is not transferrable or transmittable to any other ships.

There is no automatic upgrading of existing hp’s after later marks are developed. A ship with an hp must warp into and out of a friendly production center star, after which the hp is considered upgraded at no cost. No stopping time is required.

TA-500z Super Hallucination Projector

Descriptive: The Super Hallucination Projector is the same as the earlier marks except that the hallucination cannot be penetrated by any known weapon. There is only 1 mark.

Designation: hpz as in 5/Z.12hpz, 10/BB.85hpz or 8/P.6hpz|ad|rd|td, etc.

Prerequisite: TA-500y

Development Cost: 100 MT

Item Cost: 16 MT Limited to a warship with 7 guns or larger.

When inoperable: As per damage chart on page 90.

Narrative: The operational characteristics of the hpz are the same as earlier marks except that the super hallucination cannot be penetrated by any weapon, including the hpz. Also, the hpz can be mounted on a smaller ship than earlier marks.

TA-600 Mark I Sub-Warp Drive

Descriptive: Sub-Warp drive allows a ship to drop out and re-enter at will the desired battle board dimensional and temporal realities. This allows ships to approach an enemy to conduct a short-range attack.

Designation: i (option-exclamation point) as in i5/Z.12, i10/CS.85 or i8/S.6ad|rd|td|****, etc.

Prerequisite: None.

Development Cost: 100 MT

Item Cost: 8 MT Limited to ship with 5 *short* guns or larger.

When inoperable: As per damage chart on page 90.

Narrative: The i allows a ship to drop off the battle board for exactly 2 moves on the battle board. Both of the ship's moves in sub-warp are pre-plotted by the player. The ship may not travel through obstacles while in sub-warp. A ship in sub-warp is not visible to ships in normal space or those in sub-warp. The ship reappears in normal space at the end of 2 moves. A ship may return to sub-warp movement the turn after entering normal space. A ship may not enter pre-warp the same move it exits sub-warp; it must wait 1 battle board turn. A sub-warp equipped ship must warp onto the battle board in normal space.

Weapons cannot be used while in Mark I sub-warp; the ship is at maximum defense.

TA-601 Mark II Sub-Warp Drive

Descriptive: Same as TA-600 Mark I Sub-Warp Drive.

Designation: ii as in ii5/Z.12, ii10/CS.85 or ii8/S.6ad|rd|td|****, etc.

Prerequisite: TA-600 Mark I Sub-Warp Drive

Development Cost: 100 MT

Item Cost: 16 MT Limited to ship with 5 *short* guns or larger.

When inoperable: As per damage chart on page 90.

Narrative: The ii allows a ship to drop into sub-warp for exactly 4 moves on the battle board. All 4 moves in sub-warp must be pre-plotted by the player. Otherwise the Mark II is the same as the Mark I.

The Mark I may be upgraded to the Mark II by paying the full cost of the Mark II. There is no automatic upgrading of an existing Mark I after the Mark II has been developed. A ship with a Mark I must warp into and out of a friendly production center star, after which the Mark I is considered upgraded at the full cost of 16 MT. No stopping time is required.

TA-602 Mark III Sub-Warp Drive

Descriptive: Same as TA-600 Mark I Sub-Warp Drive.

Designation: iii as in iii5/Z.12, iii10/CS.85 or iii8/S.6ad|rd|td|****, etc.

Prerequisite: TA-601 Mark II Sub-Warp Drive

Development Cost: 100 MT

Item Cost: 16 MT Limited to ship with 5 *short* guns or larger.

When inoperable: As per damage chart on page 90.

Narrative: Same as Marks I and II except that sub-warp *will* last 8 moves, including the entry move. The ninth move will be to re-enter normal space. A player must record his ship's sub-warp moves as a battle progresses. A ship may return to sub-warp moves the turn after entering normal space.

Upgrading procedure is the same as for the Mark II.

TA-603 Mark IV Sub-Warp Drive

Descriptive: Same as TA-600 Mark I Sub-Warp Drive.

Designation: `iiii` as in `iiii5/Z.12`, `iiii10/CS.85` or `iiii8/S.6ad|rd|td|****`, etc.

Prerequisite: TA-602 Mark III Sub-Warp Drive

Development Cost: 100 MT

Item Cost: 16 MT Limited to ship with 5 *short* guns or larger.

When inoperable: As per damage chart on page 90.

Narrative: Same as the Mark III, except that sub-warp can last anywhere from 1 to 8 moves, including the entry move. The number of moves to be spent in sub-warp is the ship captain's option when recording the next move on the ship's battle record.

Upgrading procedure is the same as for the Mark II.

TA-604 Mark V Sub-Warp Drive

Descriptive: Same as TA-600 Mark I Sub-Warp Drive.

Designation: `iiiii` as in `iiiii5/Z.12`, `iiiii10/CS.85` or `iiiii8/S.6ad|rd|td|****`, etc.

Prerequisite: TA-603 Mark IV Sub-Warp Drive

Development Cost: 100 MT

Item Cost: 16 MT Limited to ship with 5 *short* guns or larger.

When inoperable: As per damage chart on page 90.

Narrative: The Mark V allows sub-warp to last from 1 to 16 moves. Other operational characteristics of the Mark V are the same as the Mark IV.

Upgrading procedure is the same as for the Mark II.

TA-605 Mark VI Sub-Warp Drive

Descriptive: Same as TA-600 Mark I Sub-Warp Drive, except that this mark of Sub-Warp Drive is costly and bulky, which forces the ship size limitation described below.

Designation: `iii|iii` as in `iii|iii5/Z.12`, `iii|iii10/CS.85` or `iii|iii8/S.6ad|rd|td|****`, etc.

Prerequisite: TA-604 Mark V Sub-Warp Drive

Development Cost: 100 MT

Item Cost: 2 MT per gun Limited to ship with 8 guns or larger and cannot be combined with TA-117 Raider (page 131).

When inoperable: As per damage chart on page 90.

Narrative: The Mark VI allows sub-warp to last from 1 to 32 moves. Additionally, a ship in Mark VI sub-warp may use any weapons to attack a ship in Marks I through V sub-warp. Since the ship being attacked can only use full defense, the obvious tactic for the victim will be to depart sub-warp immediately so battle can be fought in normal space. Opposing ships both using the Mark VI will fight normally. A ship in Mark VI sub-warp cannot attack a ship in normal space.

A ship that mounts the Mark VI Sub-Warp Drive is able to see the movements of all other ships in sub-warp or in normal space. Range is unlimited on the battle board.

Upgrading procedure is the same as for the Mark II, except that ship size limitations must be respected.

TA-606g to TA-606z Advanced Sub-Warp Drives

Descriptive: Later marks of Sub-Warp Drives are functionally similar to TA-605 Mark VI Sub-Warp Drive, but with 1 important enhancement. There are 20 marks, starting with the Mark VII, which is identified as jgi.

Designation: jgi through jzi as in jk5/Z.12, jx10/CS.85 or jm8/S.6ad|rd|td|****, etc.

Prerequisite: TA-605 Mark VI Sub-Warp Drive. Must be developed in sequence starting with TA-606g.

Development Cost: 100 MT for the Mark VII (jgi) and 30 MT each for later marks (jhj through jzi). Must be developed in order.

Item Cost: 2 MT per gun Limited to ship with 8 guns or larger and cannot be combined with TA-117 Raider (page 131).

When inoperable: As per damage chart on page 90.

Narrative: The Mark VII jgi allows sub-warp to last from 1 to 32 moves. Additionally, a ship in Mark VII jgi or later sub-warp may use any weapons to attack a ship using an earlier mark of sub-warp. The ship with an earlier mark can only use full defense, forcing the victim to depart sub-warp immediately so battle can be fought in normal space. Ships using equal marks (Marks VI and later) of sub-warp can attack each other normally. A ship using any mark of sub-warp cannot attack a ship in normal space nor can a ship in normal space attack a ship using any mark of sub-warp.

A ship that mounts the Mark VII jgi or later Sub-Warp Drive is able to observe the movements of all other ships with an equal or lesser mark of sub-warp while they are in sub-warp. Range is unlimited on the battle board.

Upgrading procedure is the same as for the Mark II, except that ship size limitations must be respected.

Chapter 14



Apocalypse TAs



TA-700 Mark I Geode Moon Base – GMB¹ – 100 MT
TA-701 Mark II Geode Moon Base – GMB² – 20 MT
TA-702 Mark III Geode Moon Base – GMB³ – 4 MT
TA-703 Mark IV Geode Moon Base – GMB⁴ – 4 MT
TA-704 Mark V Geode Moon Base – GMB⁵ – 4 MT
TA-705 Mark VI Geode Moon Base – GMB⁶ – 4 MT
TA-706 Mark VII Geode Moon Base – GMB⁷ – 30 MT
TA-707 Mark VIII Geode Moon Base – GMB⁸ – 4 MT
TA-708 Mark IX Geode Moon Base – GMB⁹ – 4 MT
TA-709 Mark X Geode Moon Base – GMB¹⁰ – 4 MT
TA-710 Mark XI Geode Moon Base – GMB¹¹ – 30 MT

TA-716 Hollow-Moon Base Detection Device – (gmb) – 16 MT

TA-720 Mark I Battle Damage Time Machine – tm – 100 MT
TA-721 Mark II Battle Damage Time Machine – tm² – 100 MT

TA-730 Moon Buster – mbu – 4 MT

TA-740 Morphing Warship – mw – 60 MT

TA-750 Asteroid Miner – AW – 40 MT

TA-760 Slavery – Y-12G.Slave16 – 4 MT

TA-800 Mark I Warp Gate – WG¹ – 100 MT
TA-801 Mark II Warp Gate – WG² – 50 MT
TA-802 Mark III Warp Gate – WG³ – 20 MT
TA-803 Mark IV Warp Gate – WG⁴ – 50 MT
TA-804 Mark V Warp Gate – WG⁵ – 100 MT
TA-805 Mark VI Warp Gate – WG⁶ – 100 MT
TA-806 Mark VII Warp Gate – WG⁷ – 100 MT

TA-900 Alternate Universe – () – 100 MT

TA-700 Mark I Geode Moon Base

Descriptive: The Geode Moon Base is a hollowed out rogue moonlet that contains factories, and in its later marks can be protected by Dead Dwarf Fortresses. It is located in any triple, quadruple, pentuple or sextuple star system where swirling masses of rogue moons, asteroids, comets, planetoids, rocks, moonlets, Kuiper belt debris, dust, gases, frozen human corpses and interstellar rubbish choke the star system in a dangerous mishmash of unstable orbits and cataclysmic collisions. The factories are powered by fusion plants that use the moonlet itself as a fuel source. Illustration page 233.

Designation: GMB as in GMB¹-Y-6Q (designation + mark + dash + host star location)

Prerequisite: TA-6 Dead Dwarf Fortress (page 107), which in turn requires TA-192 Mark I Moon Fortress (page 145). TA-210 Super Deflector is also needed.

Development Cost: 100 MT

Item Cost: The Mark I requires exactly 2 GU and 2 FY (page 58) for a total cost of 48 MT. Initial construction consumes 1 of the 2 GU, leaving just 1 GU for defense. The TA-210 Super Deflector is a no-extra-cost capability partly accomplished by the hollowed-out moon's thick crust.

When inoperable: Never. An enemy ship that fires 5 or more guns at range 10 or less destroys the GU, rendering the Geode Moon Base neutral. All defenses must be destroyed or chased away before the GU can be destroyed. The first empire to drop 1 GU on a neutral GMB inherits the facility.

Narrative: The Mark I Geode Moon Base (GMB¹) functions just as a production center, but with a *maximum* of 2 Factories (FY) that are installed by the colonizing fleet. The GMB¹ produces an income of 8 MT/Cycom. It is located in any triple, quadruple, pentuple or sextuple star system, but not including a home star or binary. It is not visible to the casual observer who might warp in and out of a multiple star system, except that a 4-gun ship and larger that spends 1 Cycom or

more exploring the system will be able to identify the location of the GMB and thus allow the GMB to be attacked. Warp ins to multiple stars are reported normally.

The Mark I requires 1 Cycom of construction time before it becomes operational, just as for a ship. The GU and FY required for construction must be carried in by merchant ship(s).

The Mark I GMB's 2 FY can manufacture as much as 16 MT of materiel per Cycom. The facility can conduct ship upgrades and repairs or restock expendable ordnance up to 16 MT/Cycom. Incremental Cycom-to-Cycom-to-Cycom upgrades or repairs are not allowed.

Any fleet that warps into a multiple star system will spend 1 year using its battle board drive to move from the planet of value to the GMB. The fleet will arrive as a cohesive force at range 50 east of the GMB the year following warp in. The moment of arrival at the GMB is the same as other warp ins on the second year. This 1-year travel at slow battle board speed to reach the GMB always applies to both friendly and alien forces that enter the GMB's star system. Ships may warp out directly from a GMB. Battle board movement does not generate a warp ripple.

GMB's MT Number of Factories	Production	Max. MT/Cycom Industrial Capacity
2 (Mark I GMB)	2-MT/year	16 MT
4 (Mark II GMB)	4-MT/year	32 MT
6 (Mark III GMB) *	6-MT/year	64 MT
8 (Mark IV GMB)	8-MT/year	128 MT
10 (Mark V GMB)	10-MT/year	256 MT
12 (Marks VI-XI GMB)	12-MT/year	512 MT**
* Mark III is the earliest mark that can self-upgrade. ** Capacity does not equal IMLO Bank balance or income. You must have the MT to build this much.		

TA-701 Mark II Geode Moon Base

Descriptive: Same as the Mark I.

Designation: GMB as in GMB²-Y-6Q (designation + mark + dash + host star location)

Prerequisite: TA-700 Mark I Geode Moon Base

Development Cost: 20 MT

Item Cost: The Mark II requires 1 GU and 2 FY that are added to an existing Mark I GMB. The GMB expansion project consumes the 1 GU. The Mark I cannot be upgraded to the Mark II until the Mark I is completed. Upgrade FY and GU must arrive by merchant.

When inoperable: Same as Mark I

Narrative: The Mark II Geode Moon Base (GMB²) functions just as the Mark I, except that there are 4 factories that produce an income of 16 MT/Cycom. Manufacturing capacity for purposes of goods produced, upgrades or repairs is limited to 32 MT/Cycom. The factories are operational year 1 of the Cycom after installation.

TA-702 Mark III Geode Moon Base

Descriptive: Same as the Mark I.

Designation: GMB as in GMB³-Y-6Q (designation + mark + dash + host star location)

Prerequisite: TA-701 Mark II Geode Moon Base

Development Cost: 4 MT

Item Cost: The Mark III requires 1 GU and 2 FY that are added to an existing Mark II GMB. The GMB expansion project consumes the 1 GU. The Mark II cannot be upgraded to the Mark III until the Mark II is completed. Upgrade FY and GU must arrive by merchant.

When inoperable: Same as Mark I

Narrative: The Mark III Geode Moon Base (GMB³) functions just as the Mark II, except that there are 6 factories that produce an income of 24 MT/Cycom. Manufacturing capacity for purposes of goods produced, upgrades or repairs is limited to 64 MT/Cycom. The factories are operational year 1 of the Cycom after installation.

TA-703 Mark IV Geode Moon Base

Descriptive: Same as the Mark I.

Designation: GMB as in GMB⁴-Y-6Q (designation + mark + dash + host star location)

Prerequisite: TA-702 Mark II Geode Moon Base

Development Cost: 4 MT

Item Cost: The Mark III must conduct its own upgrade to Mark IV. The Mark IV requires 1 GU and 2 FY that are added to an existing Mark III GMB. The GMB expansion project consumes the 1 GU.

When inoperable: Same as Mark I

Narrative: The Mark IV Geode Moon Base (GMB⁴) functions just as the Mark III, except that there are 8 factories that produce an income of 32 MT/Cycom. Manufacturing capacity for purposes of goods produced, upgrades or repairs is limited to 128 MT/Cycom. The factories are operational year 1 of the Cycom after installation.

TA-704 Mark V Geode Moon Base

Descriptive: Same as the Mark I.

Designation: GMB as in GMB⁵-Y-6Q (designation + mark + dash + host star location)

Prerequisite: TA-703 Mark IV Geode Moon Base

Development Cost: 4 MT

Item Cost: The Mark IV must conduct its own upgrade to Mark V. The Mark V requires 1 GU and 2 FY that are added to an existing Mark IV GMB. The GMB expansion project consumes the 1 GU.

When inoperable: Same as Mark I

Narrative: The Mark V Geode Moon Base (GMB⁵) functions just as the Mark IV, except that there are 10 factories that produce an income of 40 MT/Cycom. Manufacturing capacity for purposes of goods produced, upgrades or repairs is limited to 256 MT/Cycom. The factories are operational year 1 of the Cycom after installation.

TA-705 Mark VI Geode Moon Base

Descriptive: Same as the Mark I.

Designation: GMB as in GMB⁶-Y-6Q (designation + mark + dash + host star location)

Prerequisite: TA-704 Mark V Geode Moon Base

Development Cost: 4 MT

Item Cost: The Mark V must conduct its own upgrade to Mark VI. The Mark VI requires 1 GU and 2 FY that are added to an existing Mark V GMB. The GMB expansion project consumes the 1 GU.

When inoperable: Same as Mark I

Narrative: The Mark VI Geode Moon Base (GMB⁶) functions just as the Mark V, except that there are 12 factories that produce an income of 48 MT/Cycom. Manufacturing capacity for purposes of goods produced, upgrades or repairs is limited to 512 MT/Cycom. The factories are operational year 1 of the Cycom after installation.

TA-706 Mark VII Geode Moon Base

Descriptive: Same as the Mark I.

Designation: GMB as in GMB⁷-Y-6Q (designation + mark + dash + host star location)

Prerequisite: TA-705 Mark VI Geode Moon Base plus requirements for TA-192 Mark I Moon Fortress (page 145).

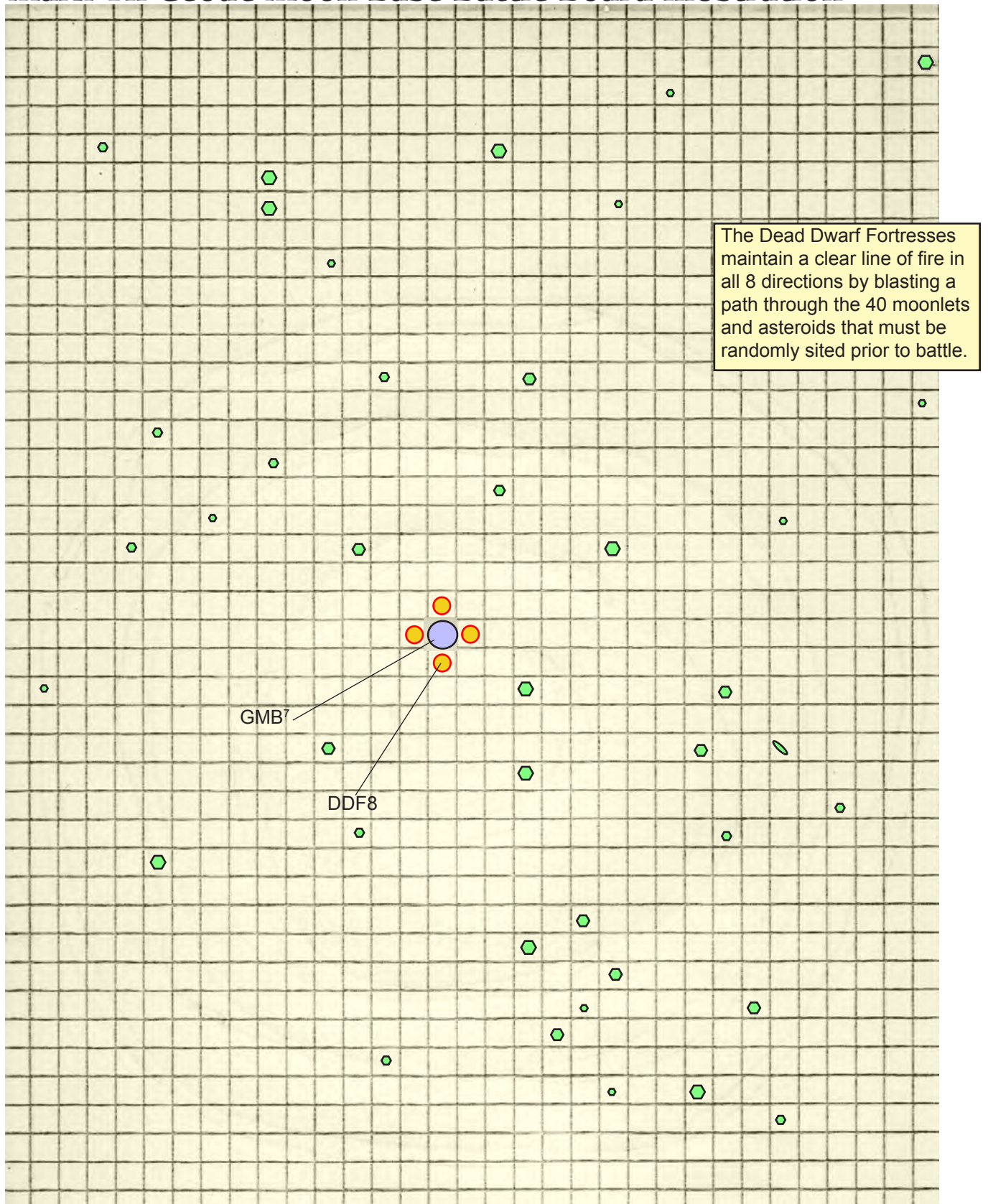
Development Cost: 30 MT

Item Cost: The Mark VI must conduct its own upgrade to Mark VII. It installs 4 TA-6 Mark I Dead Dwarf Fortresses at a cost of 36 MT each.

When inoperable: Same as Mark I, except that all defending fortresses and ships must be destroyed or chased away before the defending GU can be destroyed by gunfire.

Narrative: The Mark VII Geode Moon Base (GMB⁷) functions just as the Mark VI, except that there are 4 TA-6 Dead Dwarf Fortresses DDF8 emplaced at range 1 to the N, S, E and W of the GMB on the battle board.

Mark VII Geode Moon Base Battle Board Illustration



TA-707 Mark VIII Geode Moon Base

Descriptive: Same as the Mark I.

Designation: GMB as in GMB⁸-Y-6Q (designation + mark + dash + host star location)

Prerequisite: TA-706 Mark VII Geode Moon Base plus requirements for TA-193 Mark II Moon Fortress (page 145).

Development Cost: 4 MT

Item Cost: The Mark VII must conduct its own upgrade to Mark VIII. It installs 4 TA-6 Dead Dwarf Fortresses DDF16 at a cost of 120 MT each. TA-22 Mark I Upgrading Ships or TA-23 Mark II Upgrading Ships (page 112) must be used to upgrade existing DDF8.

When inoperable: Same as Mark VII

Narrative: The Mark VIII Geode Moon Base (HMB⁸) functions just as the Mark VII, except that there are 4 TA-6 Dead Dwarf Fortresses DDF16 emplaced at range 1 to the N, S, E and W of the GMB on the battle board.

TA-708 Mark IX Geode Moon Base

Descriptive: Same as the Mark I.

Designation: GMB as in GMB⁹-Y-6Q (designation + mark + dash + host star location)

Prerequisite: TA-707 Mark VIII Geode Moon Base plus requirements for TA-194 Mark III Moon Fortress (page 145).

Development Cost: 4 MT

Item Cost: The Mark VIII must conduct its own upgrade to Mark IX. It installs 4 TA-6 Dead Dwarf Fortresses DDF24 at a cost of 300 MT each. TA-22 Mark I Upgrading Ships or TA-23 Mark II Upgrading Ships (page 112) must be used to upgrade existing DDF16. Existing Marks VII or VIII can be upgraded directly to the Mark IX.

When inoperable: Same as Mark VIII

Narrative: The Mark VIII Geode Moon Base (GMB⁸) functions just as the Mark VIII, except that there are 4 TA-6 Dead Dwarf Fortresses DDF24 emplaced at range 1 to the N, S, E and W of the GMB on the battle board.

TA-709 Mark X Geode Moon Base

Descriptive: Same as the Mark I.

Designation: GMB as in GMB¹⁰-Y-6Q (designation + mark + dash + host star location)

Prerequisite: TA-708 Mark IX Geode Moon Base plus requirements for TA-195 Mark IV Moon Fortress (page 146).

Development Cost: 4 MT

Item Cost: The Mark IX must conduct its own upgrade to Mark X. It installs 4 TA-6 Dead Dwarf Fortresses DDF32 at a cost of 600 MT each. TA-22 Mark I Upgrading Ships or TA-23 Mark II Upgrading Ships (page 112) must be used to upgrade existing DDF24. Existing Marks VII, VIII or IX can be upgraded directly to the Mark X.

When inoperable: Same as Mark IX

Narrative: The Mark X Geode Moon Base (GMB¹⁰) functions just as the Mark IX, except that there are 4 TA-6 Dead Dwarf Fortresses DDF32 emplaced at range 1 to the N, S, E and W of the GMB on the battle board.

TA-710 Mark XI Geode Moon Base

Descriptive: Same as the Mark I.

Designation: GMB as in GMB¹¹-Y-6Q (designation + mark + dash + host star location)

Prerequisite: TA-708 Mark X Geode Moon Base

Development Cost: 30 MT

Item Cost: 1 GU, which is consumed by the upgrade process. Existing Marks VII, VIII, IX or X must conduct their own upgrade, which consists of intensive suicide training for management and workers.

When inoperable: Same as Marks VII, VIII, IX or X, except that instead of going neutral, the Geode Moon Base explodes.

Narrative: The Mark XI Geode Moon Base (GMB¹¹) functions just as the Mark VII and later, except that it will self-destruct instead of going neutral.

TA-716 Geode Moon Base Detection Device

Descriptive: The Geode Moon Base Detection Device is related to TA-5 Dead Dwarf Telescope in that it is designed to detect hard to find celestial objects. It detects the heat emanations from an otherwise dead moon, which strongly hints at a Geode Moon Base.

Designation: (gmb) as in 8/CA.51(gmb), 6/CS.13(gmb), 9/BB.73(gmb), etc.

Prerequisite: TA-703 Mark IV Geode Moon Base

Development Cost: 16 MT

Item Cost: 2 MT. Must be mounted on a ship with 4 or more guns.

When inoperable: Destroyed as a TA according to damage chart on page 90.

Narrative: The (gmb) can detect a Geode Moon Base, Mark IV or higher. The parent ship carrying the (gmb) must enter the multiple star system normally, retreat to range 1000 from the planet of value and stand for 1 full year. The (gmb) ship must report its exact activity for that 1 year on the Warp Ripple report (page 65). If a Geode Moon Base is present, the owner of the GMB must report that fact to the owner of the (gmb) ship. The following year of that same Cycom the (gmb) ship may travel at battle board speed to the GMB's location if a GMB was found.

TA-720 Mark I Battle Damage Time Machine

Descriptive: Physicists and science fiction writers alike have long studied the imponderable enigma and sequential implications of time travel. After intense investigation far, far in the future, a means was developed to move a warship approximately 1 whole minute(!) into the past. Reversing battle damage was the mundane but expected use to which it was put.

Designation: tm as in 8/CA.52tm, 5/DA.73tm or 9/S.15tm, etc.

Prerequisite: None

Development Cost: 100 MT

Item Cost: 10% of base 1 cost, rounding off fractions, of a warship (right-hand column on page 88). Available to any 3-gun warship or larger.

When inoperable: Destroyed as a TA (Damage Table, page 90).

Narrative: The Mark I Battle Board Time Machine has the ability to move a warship approximately 1 minute into the past. This allows the defending ship's captain to decide if he wants to accept the damage his ship has taken that particular battle board round, or go back 1 minute to the moment before the damage was taken. Going back 1 minute forces the attacker to recalculate hits and damage (page 90). The tm can be used once each battle board round. The defending ship must accept the result of the second round of battle damage.

TA-721 Mark II Battle Damage Time Machine

Descriptive: Same as Mark I.

Designation: tm² as in 8/CA.52tm², 5/DA.73tm² or 9/S.15tm², etc.

Prerequisite: TA-720 Mark I Battle Damage Time Machine

Development Cost: 100 MT

Item Cost: 10% of base 1 cost, rounding off fractions, of a warship (right-hand column on page 88). Available to any 3-gun warship or larger.

When inoperable: Destroyed as a TA (Damage Table, page 90).

Narrative: The Mark II Battle Damage Time Machine has the ability to move a warship as many as 2 times into the past. The tm² can be used either once or twice each battle board round. The defending ship must accept the result of the third round of battle damage. Otherwise same as the Mark I.

TA-730 Moon Buster

Descriptive: The Moon Buster technology reinforces the hull of a large warship to such an extent that it is able to nudge a hefty asteroid out of orbit. The ship uses its battle board engines to shove the rock into collision with a Moon Fortress or Geode Moon Base and obliterate same. The asteroid will always measure 1 to 2 miles in its longest dimension.

Designation: mbu as in 8/CB.49mbu, 7/BB.50mbu, 6/DR.51mbu, etc.

Prerequisite: None

Development Cost: 4 MT

Item Cost: 1 MT per gun. Available to any 10-gun warship or larger. The ship must be capable of warp and battle board speed of 6 or more.

When inoperable: A warship may not use its mbu capability if it has suffered any hull damage (Damage Table, page 90). The mbu TA itself is not subject to damage or destruction because the mbu is a basic part of a warship's hull structure.

Narrative: An mbu-equipped ship is able to nudge a large asteroid into a collision course with:

- TA 192-195 series of Moon Fortress
- TA-6 Dead Dwarf Fortress
- TA 700-710 series of Geode Moon Base
- An approaching mbu-asteroid on a 180° collision course

The procedure used is this:

1. Fleet warps into a star with Moon Fortress or Dead Dwarf Fortress protection. Fleet must spend subsequent year at battle board speed to reach Geode Moon Base.
2. The mbu-equipped ship moves to a point 1,000 battle board squares due east of the planet of value or Geode Moon Base. Other ships may accompany the mbu-equipped ship, if desired. This movement is done at speed 6, which consumes 167 battle board turns.
3. The mbu-equipped ship approaches an asteroid at speed 1 until it stops in the battle board square that is range 1 to the east of the asteroid.
4. The mbu-ship will then accelerate itself and the asteroid by speed 1 increases until they reach speed 6. Course adjustments will be made normally. If the Enhanced Movement System (page 266) is used, the mbu-ship will consume road apples at twice the usual rate for acceleration or maneuvering as long as it is pushing the asteroid. However, an mbu-ship carries twice the usual number of road apples for this mission (only).
5. After another 170 or more battle board turns, the mbu-ship will guide the asteroid to a site at range 48 to 52 from the targeted moon. The asteroid must be approaching at speed 6 along 1 of the 8 directions from the moon. The mbu-ship must remain in full defensive mode (cannot fire guns or torpedoes) while guiding the asteroid, but is allowed temporarily to break free of the asteroid to fight off an attacker. Meanwhile, the asteroid will drift.
6. The mbu-ship releases the asteroid at range 48 to 52 from its target and watches the giant rock drift at speed 6 for 8 or 9 moves until it hits the Moon Fortress or Dead Dwarf Fortress. The fortress is destroyed. A Moon Fortress' moon is merely cratered.

Defensive tactics include damaging the hull or destroying the mbu-ship prior to the asteroid's release point at range 48 to 52 from the target. A TA-190 Heliostatic Hellfire Machine (page 143) will destroy the approaching asteroid by hitting it with bolts of hellfire 2 battle board turns in a row. A defending mbu-ship can push the asteroid off course once it has been released or it may shove its own asteroid on a 180° course into the enemy's asteroid, destroying both. A standing defender is placed normally.

TA-740 Morphing Warship

Descriptive: The Morphing Warship is able to exchange guns for speed.

Designation: mw as in 8/CS.49mw, 7/GA.50mw, 6/CS.51mw, etc.

Prerequisite: None

Development Cost: 60 MT

Item Cost: 1 MT per gun for 8-speed CS or GA 5-gun warships listed on page 88.

2 MT per gun for 7-speed CS or GA 5-gun warships listed on page 88.

3 MT per gun for 6-speed CS or GA 5-gun warships listed on page 88.

When inoperable: A ship may not use its mw capability if it has suffered any damage.

Narrative: The Mark I Morphing Warship is able to exchange guns for speed. The ship may accomplish this during movement from one battle board round to the next. The morph requires the ship to use full defensive mode (if any) for the remainder of the battle. Deflector TAs and Ambush Drives are the only functional TAs after the morph. The only real use for this TA is to build an inexpensive scouting ship that is able to upgrade itself in an attempt to flee from a superior force.

Once morphed, a ship *must* wait until the following year before it *will* remorph to its original configuration. All TAs are fully functional after remorphing. Morphings allowed are:

Speed 8 CS or GA: Morph 3 guns to achieve speed 10

Speed 7 CS or GA: Morph 4 guns to achieve speed 10

Speed 6 CS or GA: Morph 5 guns to achieve speed 10

TA-750 Asteroid Miner

Descriptive: The Asteroid Miner is a grungy and decrepit ship manned by a scruffy crew of intemperate misfits and mercenaries of doubtful loyalty. The ship produces a nice profit for the hiring manager by mining for rare minerals and valuable jewels in the rich but dangerous asteroid belts found in some solar systems.

Designation: AM as in 4/AM.49ds, etc.

Prerequisite: TA-210 Super Deflector (page 152), which itself has 4 prerequisites.

Development Cost: 40 MT

Item Cost: 40 MT, which includes cost of TA-210 Super Deflector, sd.

When inoperable: When destroyed.

Narrative: The AM is an unarmed mining ship that finds valuable resources in the asteroid belts of any uncolonized main sequence star or at an unoccupied binary star. The crew hates civilization, which is why the ship *will* move on if the star is colonized. The crew also hates you and will not work if you have any ships present at the star being mined. In fact, they hate you so much that they'll defect to any warship carrying 1 or more guns that succeeds in closing within gun range 10. The new owner then utilizes the ship as one of his own. The new owner also has the option of taking the crew off the AM and abandoning the hulk in a deep space square on the star chart where the ship is lost and can never be retrieved.

Each AM your empire captures or destroys results in a one-time reward of 20 MT (see TA-30 on page 113), but only if you destroy the ship after its capture and only if TA-30 Omnificent War Leader (OWL) has been developed. This represents the collective IMLO bounty placed on the heads of this nefarious crew of deserters, chiselers, scoundrels and perverts.

The mining effort produces 2-MT/year or 8-MT/Cycom. Production begins the Cycom after arrival at the star. Production ends the Cycom after the AM stops mining for you for any reason. The truth is that the ship produces 4-MT/year, not 2, but 1-MT/year goes to IMLO and the other 1-MT/year goes to the raggedy crew of cutthroats, which is why they do anything at all. Be happy your smelly empire even gets half.

TA-760 Slavery

Descriptive: Unscrupulous rulers of interstellar empires have been known to resort to slavery to increase industrial capacity. The victims are frequently alien beings that die in droves. Slavery does nothing for an empire's net income, but does allow for more war materiel to be produced at frontier production centers.

Designation: Slave as in Y-12G.Slave16, F-8J.

Slave14, A-10M.Slave20, etc., the star's coordinates are given, followed by .Slave followed by the total number of FY at the star.

Prerequisite: None

Development Cost: 4 MT

Item Cost: 16 MT per Factory (FY) (page 58). Must be at Main Sequence star production center. Slavery is not allowed at any other type of star's production center.

When inoperable: Factory numbers exceeding 10 are destroyed by rebellious slaves when the production center's defending GU is destroyed and the star goes neutral.

Narrative: Slavery allows the cruel rulers of your empire to upgrade the industrial capacity of a Main Sequence star to equal that of a home star. This does *not* increase the MT income produced at the star, which remains at 10-MT/year.

The chart from page 58 is shown above. The chart indicates that the maximum number of FY at a Main Sequence star is 10 and that the star's industrial capacity is 256 MT/Cycom. Slavery allows a Main Sequence star to have as many as 20 FY with an industrial capacity of 8000 MT, but does not increase the star's MT output beyond 10-MT/year.

Slaves are not known for loyalty to their oppressors, so when the Main Sequence star's 1 GU is destroyed by enemy action, the slaves will rise up and destroy all factories at the star that exceed 10. The first 10 FY are unharmed, just as FY in all other situations.

Number of Factories	Star's MT Output/Year	Max. MT/Cycom Industrial Capacity
02	2	16 MT
04	4	32 MT
06	6	64 MT
08 Home Star @ Gamestart	8	128 MT
10 Max. @ Main Sequence Star	10	256 MT
12 Max. @ TA-700 Geode Moon	12	512 MT
14 Max. @ Dead Dwarf Star	14	1000 MT
16	16	2000 MT
18	18	4000 MT
20 Max. @ Home Star*	20	8000 MT
20 Max. @ MS Star w/Slavery	10	8000 MT

TA-770 Gravity Bomb Torpedo

Descriptive: The Mark I Meandering Medusa is a guided missile that is programmed to travel along a pre-determined course until it (hopefully) reaches a damaging proximity to its target, where it will explode. The warhead is packed with fanciful science fiction balderdash that cannot be explained in terms that will ever enter the human lexicon.

Designation: Δ (option-j) as in 4/Z.12 Δ , 10/DN.85 Δ , 8/P.6 Δ , etc. (lowercase m can be used, although it is not the preferred symbol)

Prerequisite: None

Development Cost: 80 MT

Item Cost: 2 MT per launching rack and 6 MT per missile = 8 MT each. Must be on a warship having 8 or more guns; 1 Meandering Medusa rack/missile for every 4 guns. An 11-gunner, for example, can carry 2 Meandering Medusas, a 12-gunner 3, and a 30-gunner 7.

When inoperable: Launching racks/missiles are destroyed along with guns (page 90). Empty racks are destroyed first.

Narrative: A Mark I Meandering Medusa has an attack factor of 16 in a 7-squares by 7 area on the battle board. It travels at a speed of 20 (or less) for 4 moves (or fewer) on the battle board, giving it a total range of 80. The missile's entire 4-move course must be recorded at the time of launching. Movement is simultaneous with ships. The missile has unlimited maneuverability. A missile explodes at the end of its final move if it has not been programmed to explode sooner. Explosions are simultaneous with that of other torpedo types.

The Meandering Medusa cannot be attacked by gunfire. However, all marks of the Meandering Medusa are vulnerable to attack by some other torpedoes, which will destroy it and the attacking torpedo. They are: TA-300 series Unguided Torpedo, TA-310 series Phyton Torpedo, TA-320 series Homing Torpedo and TA-330 series Toss Torpedo.

The Meandering Medusa will explode as programmed even if it is hit by one of the torpedoes listed above. It will also explode if programmed to do so when it ends a move in the same square with a ship, TA-340 Asteroid Torpedo, TA-211 Torpedo Interceptor, another Meandering Medusa or any Meandering Medusa's blast pattern.

The Meandering Medusa is lost if it ends a move in the same square with a planet, moon, ring, radiation belt, ship, another Meandering Medusa, TA-211 series Torpedo Interceptor, TA-340 series Asteroid Torpedo or within the blast pattern of another TA-350 series Meandering Medusa.

A Meandering Medusa will knock a ship out of pre-warp with either its track or its blast pattern. A blast pattern is not screened out by moons or anything else that may be in the way.

Meandering Medusa reloads are available only at a friendly production center star. Each reload costs 6 MT per missile. No time is required to reload, just warp in, warp out and consider it done. A ship cannot transfer Meandering Medusa missiles to another ship.

A ship can carry only one type of torpedo.

The illustration on the next page depicts how the Mark IV version of this missile functions. The Mark IV has a larger blast pattern and more hitting power than the Mark I, otherwise it is the same.

TA-800 Mark I Warp Gate

Descriptive: The Mark I Warp Gate and required Warp Gate Tuner allow a ship to move any distance from one production center star to another. Scientists combine the quantum jump principle, which allows atom-sized objects to move around in jerky leaps without going in between, with a peculiar aspect of the multi-universe theory that reveals there is no size relationship between one universe and another.

Designation: WG as in WG¹–Y-6Q to O-9C (designation + mark + dash + star location + star location) and wgt¹ for the Warp Gate Tuner as in 7/CS.34wgt¹

Prerequisite: None. Development cannot begin until third Katun.

Development Cost: 100 MT

Item Cost: None for the Mark I Warp Gate; 8 MT for the Mark I Warp Gate Tuner. The tuner must be mounted on a 5-gun warship or larger or a 4-GU merchant or larger.

When inoperable: A Warp Gate closes when its supply of warp juice (bottom of page 58 and middle of page 72) is cut off. Also see TA-100 Warp Juice Mining Module on page 126. The wgt¹ is destroyed as per battle damage to TAs on page 90.

Narrative: The Mark I Warp Gate and Warp Gate Tuner are paired equipment. The Warp Gate provides rapid movement between production center stars and the Warp Gate Tuner is ship-mounted on a 5-gun warship or larger or 4-GU merchant or larger. The operational cost of the WG is a supply of warp juice sufficient to move 1 fleet (TA-100, page 126).

The WG will move 1 ship per Cycom from one production center star of any type to another, including home stars and TA-700 Hollow-Moon Bases, regardless of distance. It works going either direction. Time of arrival is year 1 of the following Cycom, regardless of year of entry the previous Cycom. Warp in at destination is according to rules on page 81. Warp juice consumed by the single ship's movement is equivalent to that required for 1 fleet.

The WG emits a permanent warp ripple at either end while it is in operation. The warp ripple will be reported as WG on the warp ripple report chart (page 65). Where warp juice production is routed is also listed as WG under "fleets supported" on page 66.

The both ends of the Warp Gate are invisible to the enemy, except for the warp ripple reports. Warp Gate location – 1 square – on the battle board must be determined by the owner prior to any battle and may be anywhere on the battle board, except on top of a celestial object, such as a moon or radiation pulse. A WG terminus may be used to escape the battle board during a battle. A friendly ship may enter a WG terminus at any speed from any direction and once it does so, vanishes off the battle board. An enemy ship cannot detect or enter a WG entrance – it has no effect on and doesn't exist to an enemy ship or its weapons.

A Warp Gate itself cannot be captured. But if a ship with the appropriate Warp Gate Tuner is captured, the tuner part of this technology becomes available to the capturing empire. That empire may then mount tuners on its ships and use enemy Warp Gates at will. The entrance to a Warp Gate will become visible to the enemy through this means. This is unlikely to do an enemy empire any good because both ends of a Warp Gate are likely to be protected by forces shielding the production center stars at which WG termini are located.

Development of the TA-800 series is the only way an empire can deploy its own WGs.

TA-801 Mark II Warp Gate

Descriptive: Same as the Mark I.

Designation: WG as in WG²–Y-6Q to O-9C (designation + mark + dash + star location + star location) and wgt² for the Warp Gate Tuner as in 7/CM.35wgt²

Prerequisite: TA-800 Mark I Warp Gate

Development Cost: 50 MT

Item Cost: Same as Mark I

When inoperable: Same as Mark I

Narrative: Same as the Mark I, except that a single batch of 2 ships can be transported *simultaneously* per Cycom. The operational cost of the Mark II is a supply of warp juice sufficient to move 2 fleets (TA-100, page 126). Ships will arrive scattered on the battle board as per the rules on page 81.

A Mark I Warp Gate is instantly upgraded to a Mark II as soon as its supply of warp juice is doubled to that sufficient for 2 fleets. There is no automatic upgrading of existing wgt¹ tuners after the Mark II Warp Gate has been developed. A ship with the Mark I wgt must warp into and out of any friendly production center star, after which the wgt¹ is considered upgraded to wgt² at no cost. No stopping time is required.

TA-802 Mark III Warp Gate

Descriptive: Same as the Mark I.

Designation: WG as in WG³–Y-6Q to O-9C (designation + mark + dash + star location + star location) and wgt³ for the Warp Gate Tuner as in 7/CA.36wgt³

Prerequisite: TA-801 Mark II Warp Gate

Development Cost: 20 MT

Item Cost: Same as Mark I

When inoperable: Same as Mark I

Narrative: Same as the Mark I, except that a single batch of 4 ships can be transported *simultaneously* per Cycom. The operational cost of the Mark III is a supply of warp juice sufficient to move 4 fleets (TA-100, page 126). Ships will arrive scattered on the battle board as per the rules on page 81.

A Mark II Warp Gate is instantly upgraded to a Mark III as soon as its supply of warp juice is doubled to that sufficient for 4 fleets. There is no automatic upgrading of existing wgt² tuners after the Mark III Warp Gate has been developed. A ship with the Mark II wgt must warp into and out of any friendly production center star, after which the wgt² is considered upgraded to wgt³ at no cost. No stopping time is required.

TA-803 Mark IV Warp Gate

Descriptive: Same as the Mark I.

Designation: WG as in WG³–Y-6Q to O-9C (designation + mark + dash + star location + star location) and wgt⁴ for the Warp Gate Tuner as in 7/S.37wgt⁴

Prerequisite: TA-802 Mark III Warp Gate

Development Cost: 50 MT

Item Cost: Same as Mark I

When inoperable: Same as Mark I

Narrative: Same as the Mark I, except that a single batch of any number of ships can be transported *simultaneously* per Cycom. The operational cost of the Mark IV is the same as the Mark III, which is to say a supply of warp juice sufficient to move 4 fleets (TA-100, page 126). Ships will arrive scattered on the battle board as per the rules on page 81.

A Mark III Warp Gate is instantly upgraded to a Mark IV the Cycom after this TA is developed. There is no automatic upgrading of existing wgt³ tuners after the Mark IV Warp Gate has been developed. A ship with the Mark III wgt must warp into and out of any friendly production center star, after which the wgt³ is considered upgraded to wgt⁴ at no cost. No stopping time is required.

TA-804 Mark V Warp Gate

Descriptive: Same as the Mark I.

Designation: WG as in WG⁵–Y-6Q to O-9C (designation + mark + dash + star location + star location) and wgt⁵ for the Warp Gate Tuner as in 7/CB.38wgt⁵

Prerequisite: TA-803 Mark IV Warp Gate

Development Cost: 100 MT

Item Cost: Same as Mark I

When inoperable: Same as Mark I

Narrative: Same as the Mark IV, except that arrival time is the next year instead of the next Cycom.

TA-805 Mark VI Warp Gate

Descriptive: Same as the Mark I.

Designation: WG as in WG⁶–Y-6Q to O-9C (designation + mark + dash + star location + star location) and wgt⁶ for the Warp Gate Tuner as in 7/BB.39wgt⁶

Prerequisite: TA-804 Mark V Warp Gate

Development Cost: 100 MT

Item Cost: Same as Mark I

When inoperable: Same as Mark I

Narrative: Same as the Mark V, except that ships are not scattered upon arrival at their destination. Arriving ships will be placed in a group at range 50 east of the planet of value.

TA-806 Mark VII Warp Gate

Descriptive: Same as the Mark I.

Designation: WG as in WG⁷–Y-6Q to O-9C (designation + mark + dash + star location + star location) and wgt⁷ for the Warp Gate Tuner as in 7/DR.40wgt⁷

Prerequisite: TA-805 Mark VI Warp Gate

Development Cost: 100 MT

Item Cost: Same as Mark I

When inoperable: Same as Mark I

Narrative: Same as the Mark VI, except that the Warp Gate may transport one fleet per year instead of per Cycom.

TA-900 Phase I Parallel Universe

Descriptive: Scientists, finally unfettered by the superstitious bounds of cruel religions, began to explore the “warp” concept that involves the transformation of ordinary matter, made out of particles called tardyons, which travel slower than the speed of light, to tachyons, which travel faster than the speed of light. Just as tardyons are usually at rest in the real world and it takes a lot of energy to accelerate them to near light velocity, tachyons have infinite speed and it takes a great deal of energy and poorly understood quantum physical science to slow them to velocities near that of light. It was once thought that tachyons existed in true form only in parallel universes and as anti-matter in our universe.

Many new technologies deal with the infinite number of universes that lie between tardyons and tachyons. This is the domain of luxons, particles that travel at exactly the speed of light, such as photons and neutrinos. In the world of luxons, cause does not precede effect as with tardyons, nor does effect precede cause as with tachyons. All things happen simultaneously. Location as we know it does not exist, which makes possible the cute tactic of being either here or there or even everywhere and nowhere at the same time, at separate times or never. Time is always now because time ceases to exist either as a concept or as a reality. It was the bringing together of the worlds to tachyons, tardyons and luxons that finally produced the unified Theory of Everything (TOE).

The boundless opportunities presented by the prospect of exploring an infinite array of universes, each with its bizarre laws of physics, is both profoundly baffling and overwhelmingly tempting, especially because the tardyon-tachyon-luxon balance allows easy movement from one universe to the other virtually without energy expenditure.

Designation: () as in (8)/CU.12, (10)/CS.85sd or (8)/Z.6ad|rd|td|****, etc. The () drive is commonly called the Parallel Universe Drive, which is acronymed to pud or even pu.

Prerequisite: TA-201 Radiation Deflector and TA-203 Magnetism Deflector. The sixth (Map AA, star 113) and seventh (Map BB, star 101) players are placed in a parallel universe, which consists of Maps AA, BB, CC, DD and ZZ. Eighth and Ninth players are placed on Maps CC, star 111, and DD, star 112. Illustration, page 252. May be developed in the third Katun by player agreement of a 4- or 5-player game, but may lead to too much production.

Development Cost: 100 MT

Item Cost: 2 MT for any ship. May be on any ship capable of warp speed 8 or greater.

When inoperable: Lost as a TA when taking battle damage (page 90).

Narrative: A ship carrying a pud wishing to enter the Phase I Parallel Universe must travel to one of the 4 corners on Map Z (page43). At the ship's discretion, this activates the pud, which propels the ship to the parallel universe via the Universal Black Hole on Map Section ZZ. Entry/exit locations are indicated on Map ZZ. The move from Map Z to Map ZZ consumes the remainder of a Cycom. Reverse the procedure to move from Map ZZ to Z.

When the first player from a parallel universe contacts any player on the main map, the parallel universe players will synchronize their calendar with the main map.

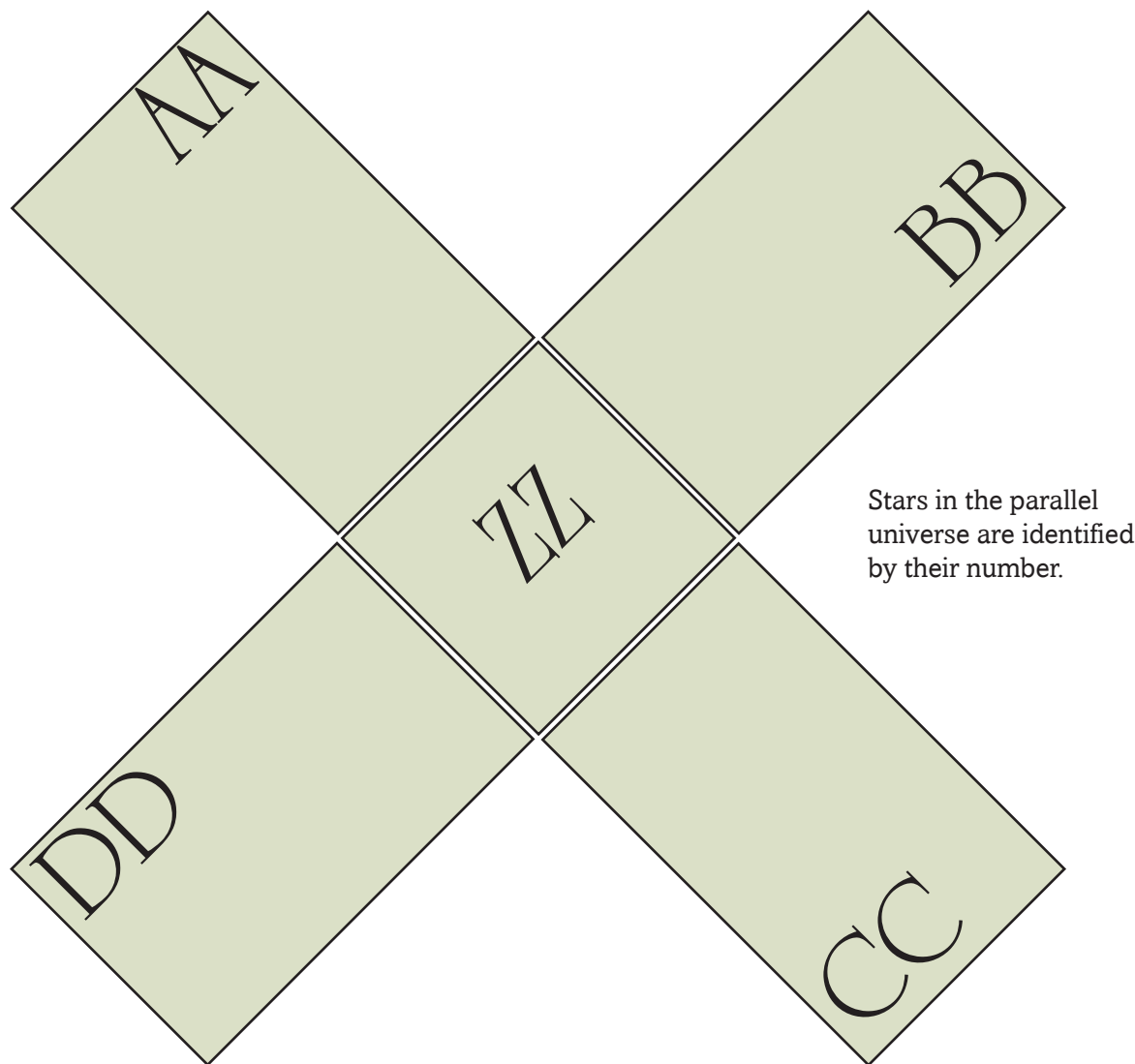
The parallel universe contains no Amphibian Empire, Pirate Empire, Xenophobiac, Plague Planet or Gas Clouds. There are 20 Main Sequence Stars, 2 Multiple Stars, 4 Giant/Supergiant Stars, 1 T Tauri Star, 4 Protostars, 1 White Dwarf, 1 Red Dwarf, 2 Dead Dwarfs, 1 Pulsar, 1 Neutron Star and 1 Magnetar. Stars are identified by number, such as 26, 3, 18, etc.

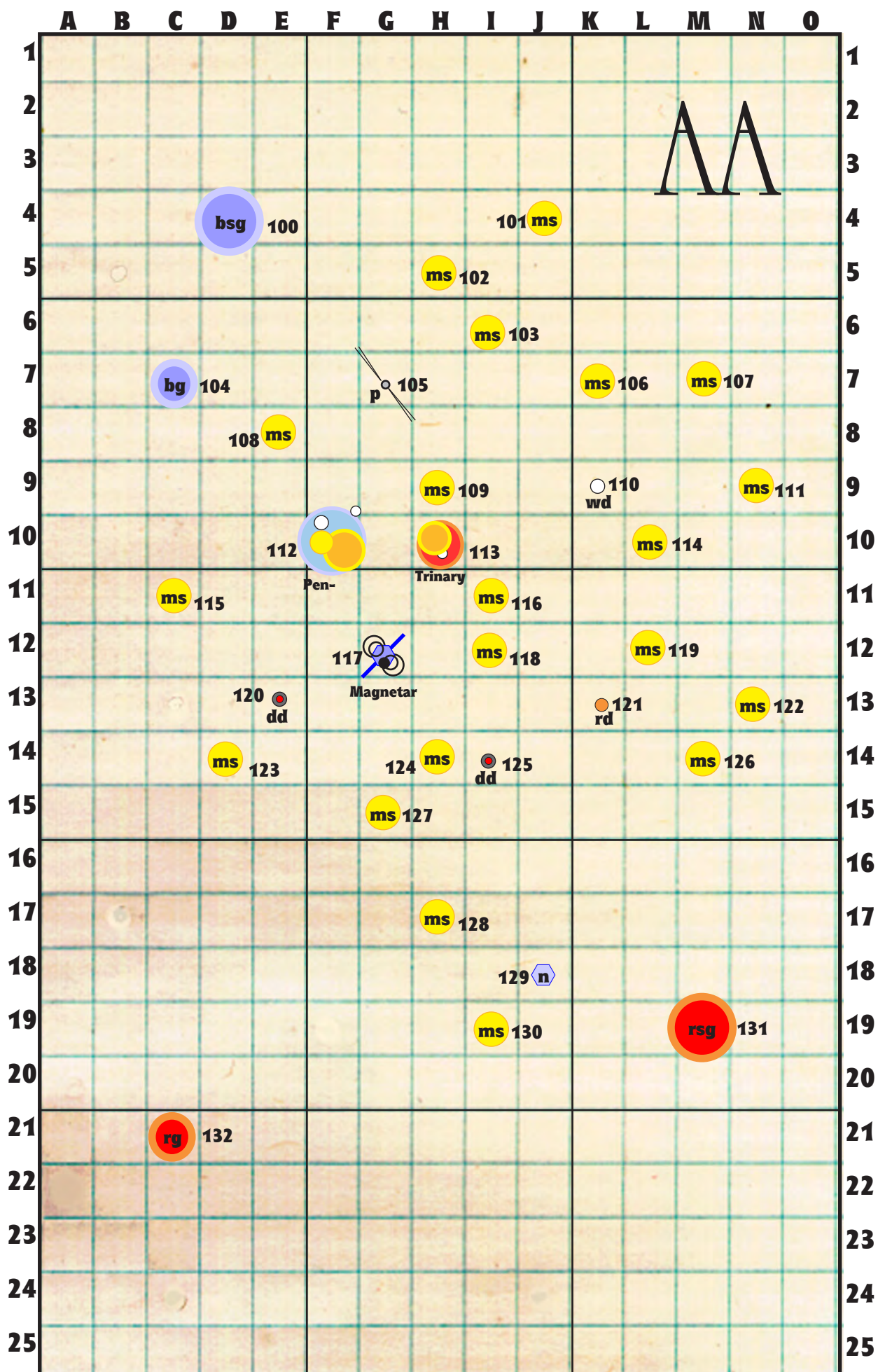
Only ships may move between universes. MT remain in the universe of origin. GU and FY can be carried by a fast merchant vessel from one universe to the other.

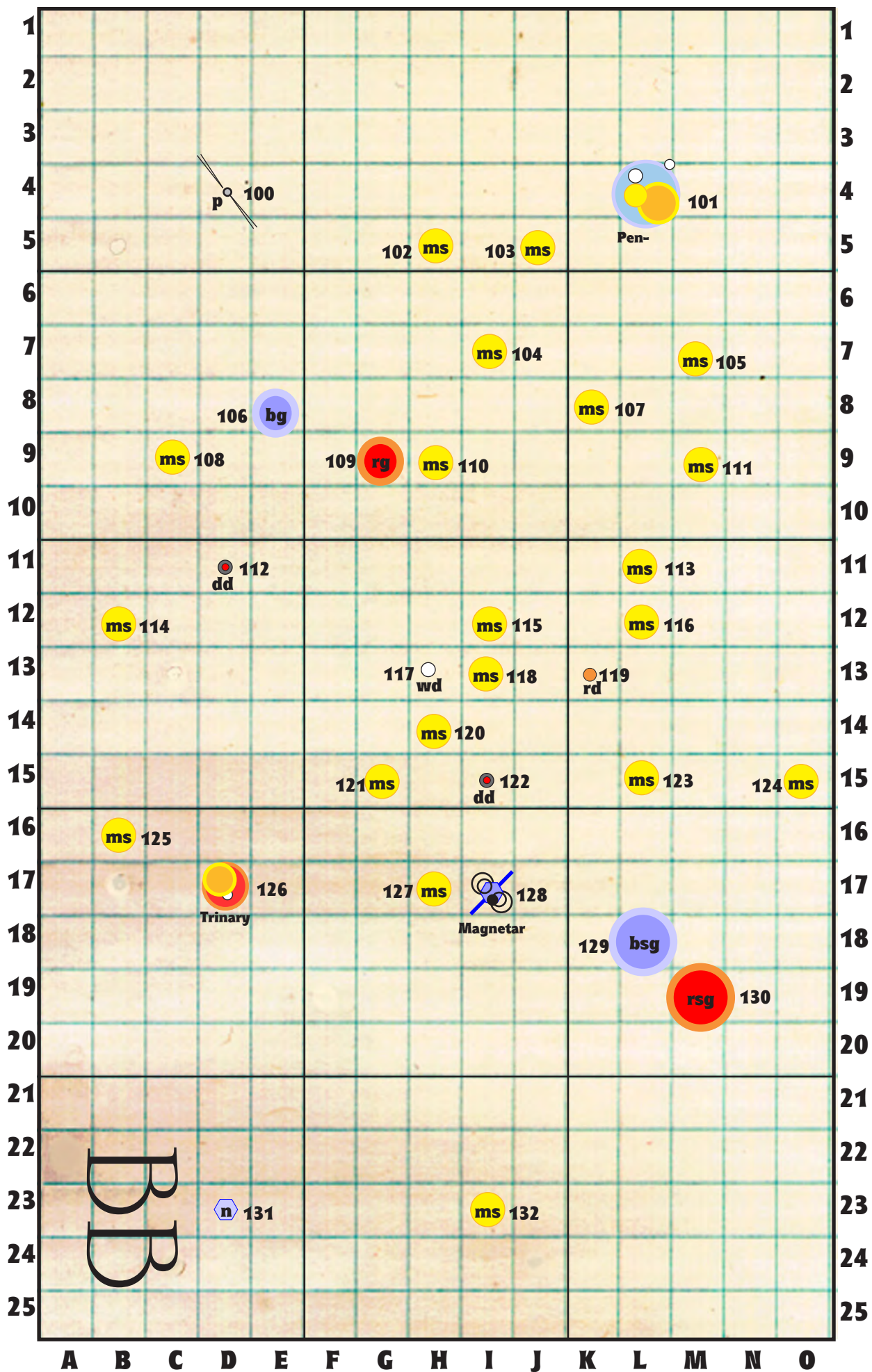
Star Chart for Phase I Parallel Universe

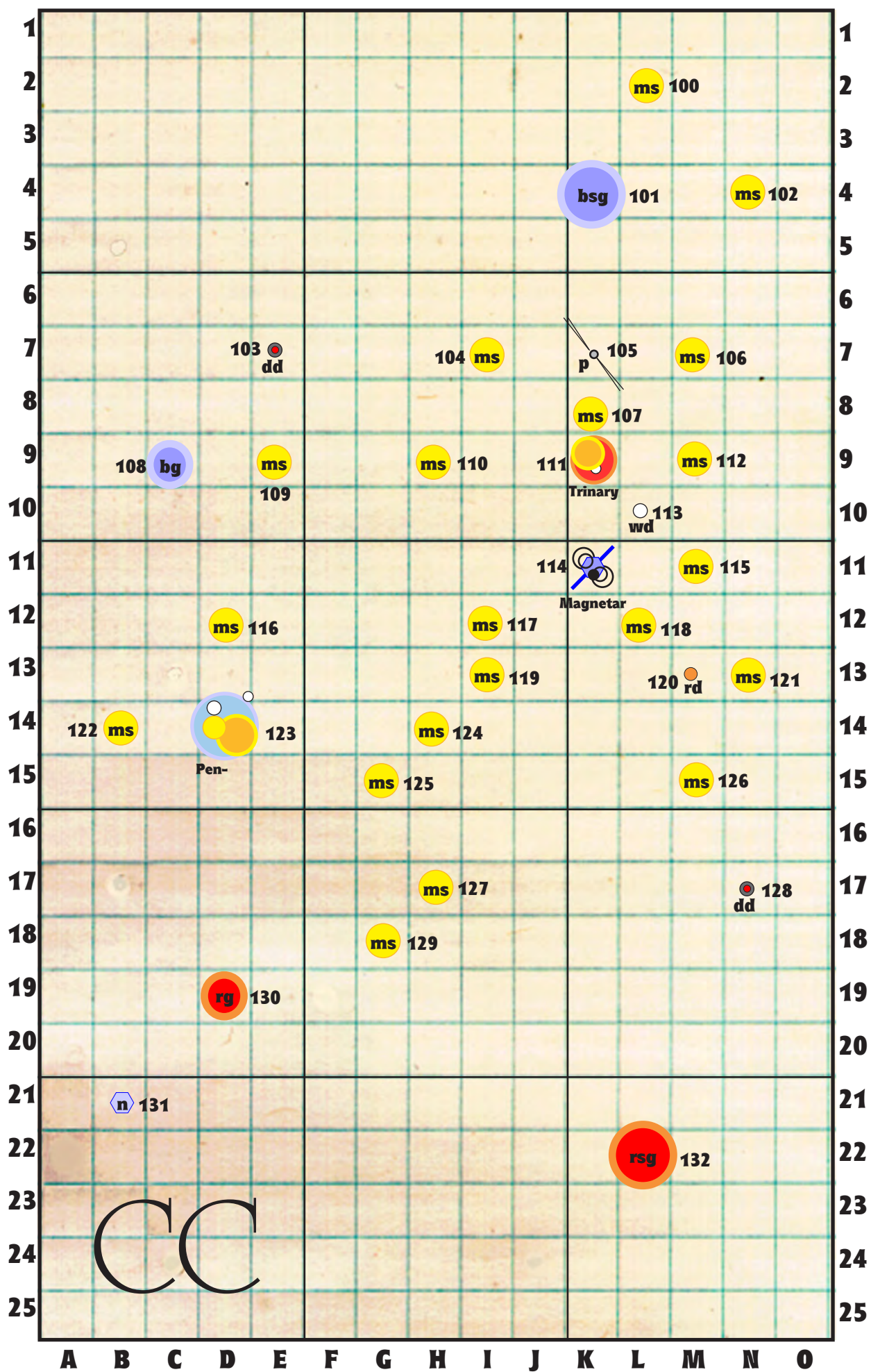
The following pages are maps for a game of 2 or 4 players who enter a larger game already in progress on the main map, sections A through Z. The center map has a black hole that leads to one of the four corners of Map Section Z.

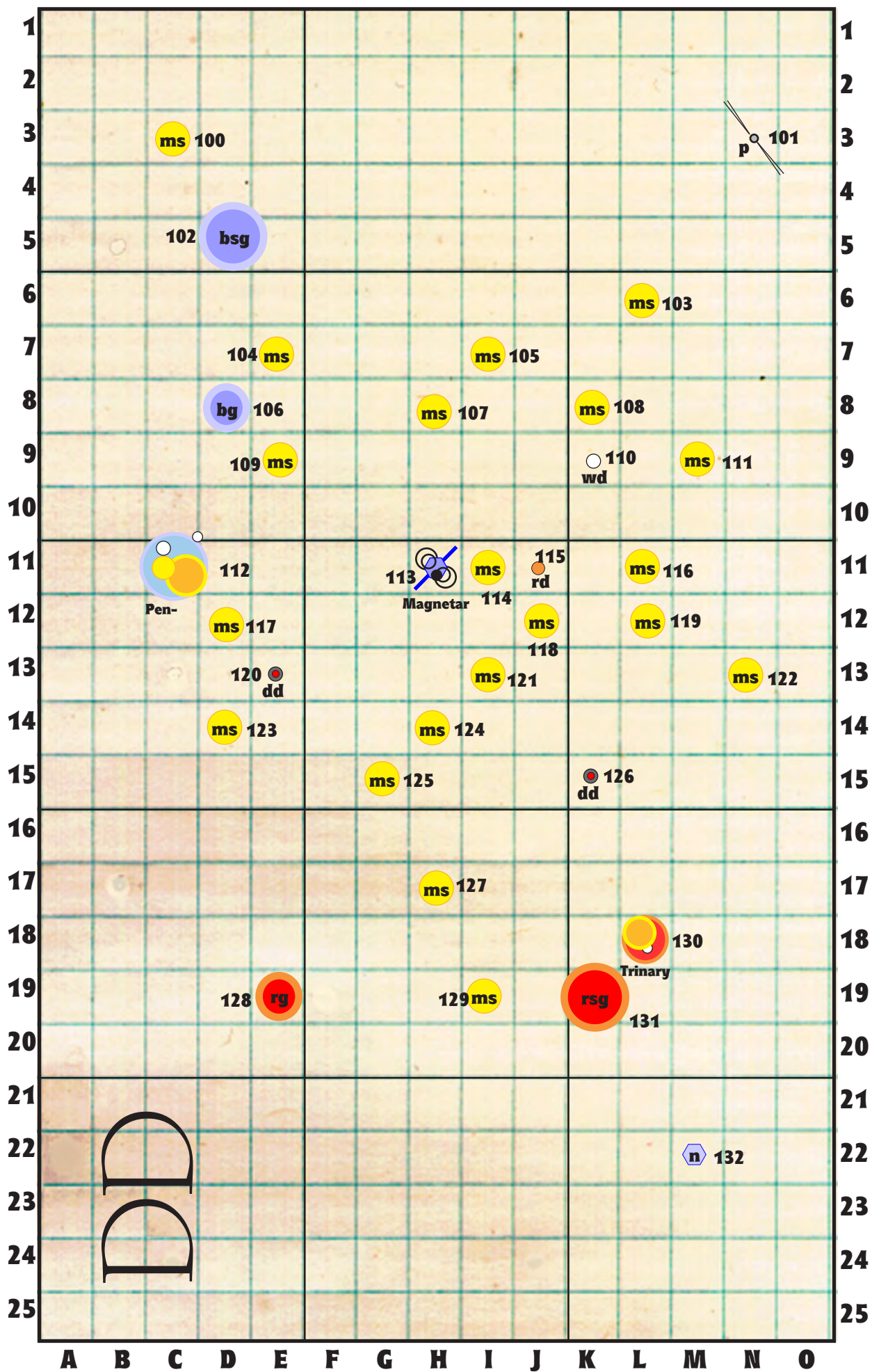
Arrange the 5 map sections as depicted below. Pin them to a panel of 27" square soft Masonite® or bulletin board material:

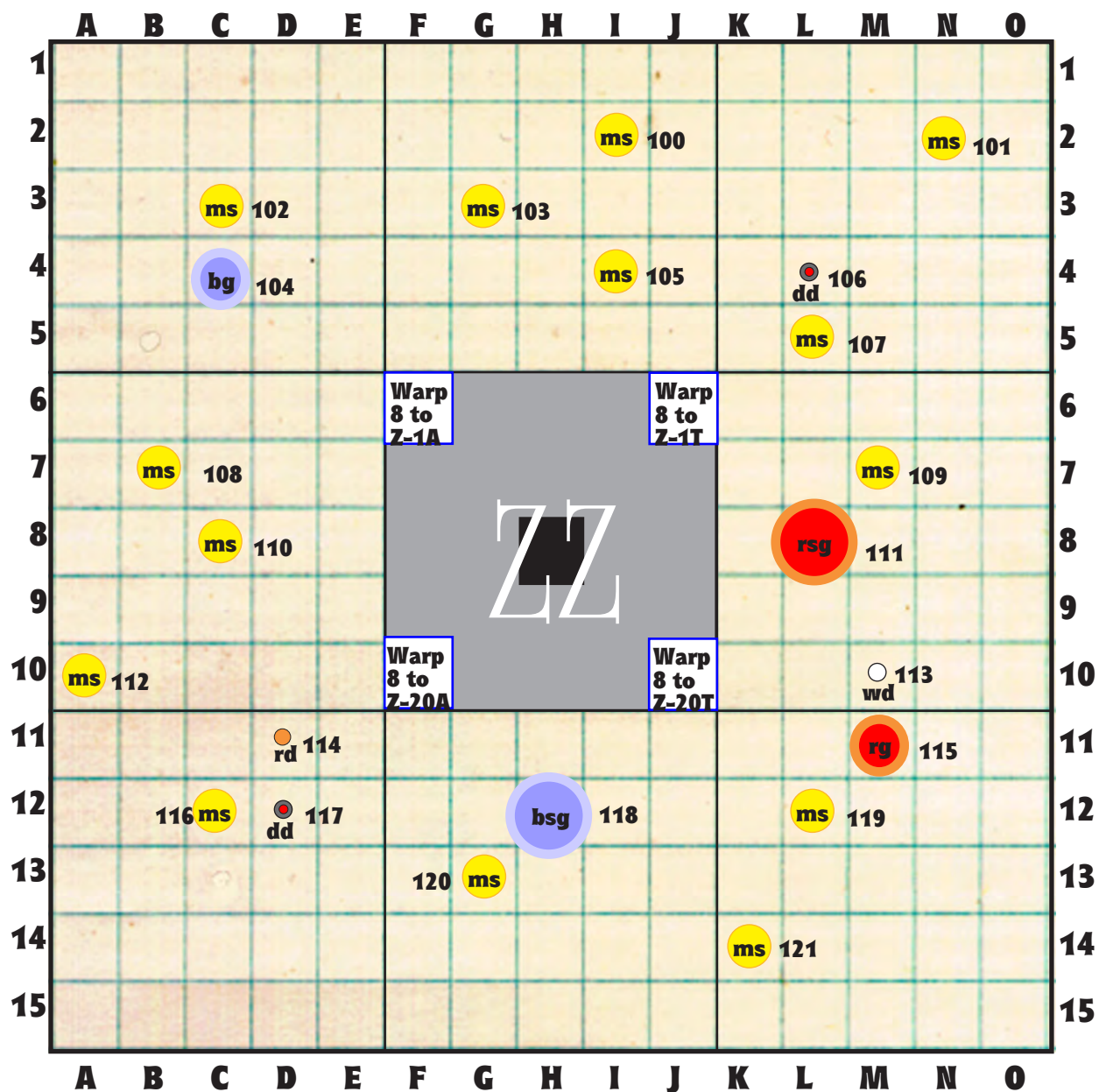












Chapter 15



Appendix I

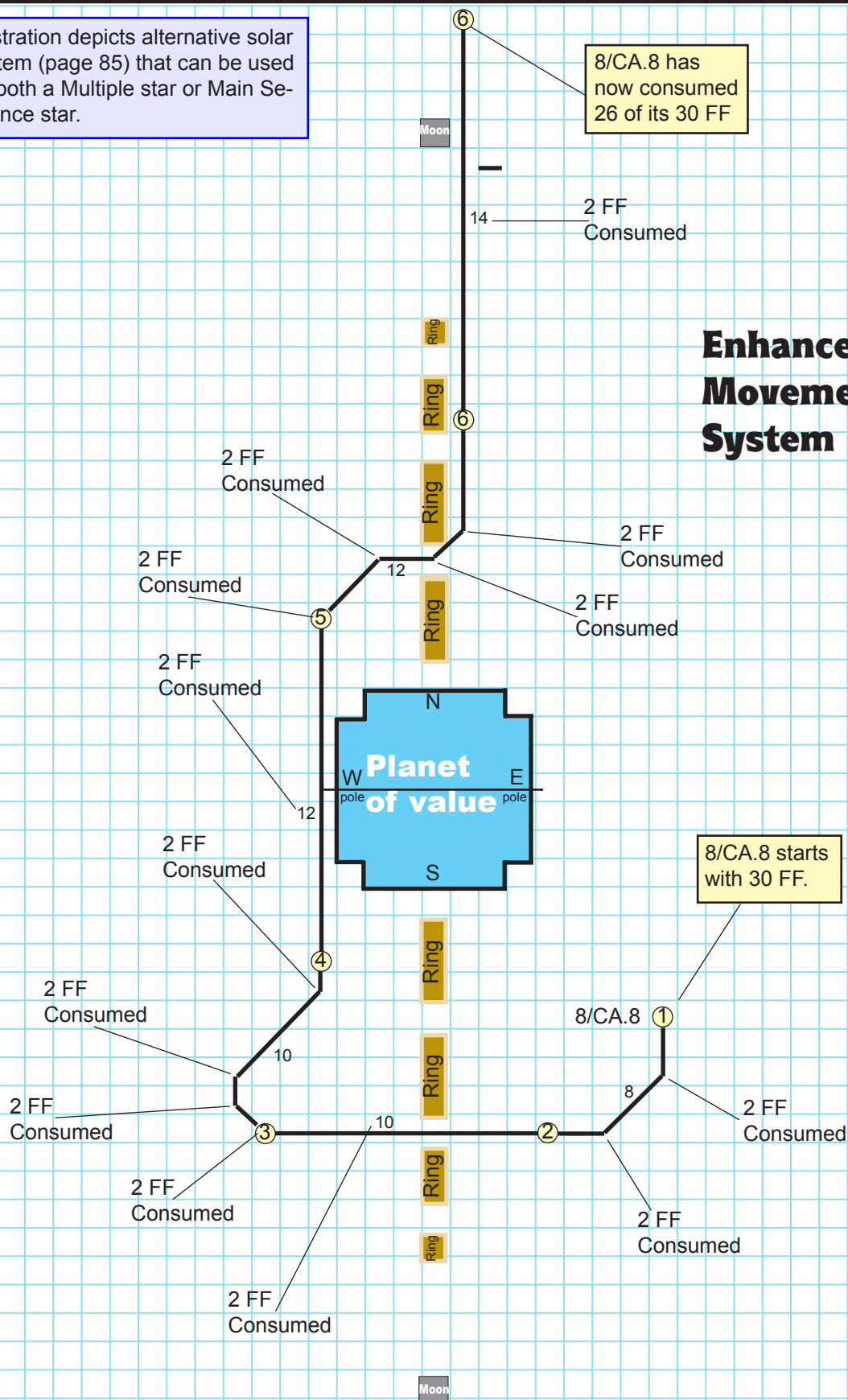
Optional Rules



Enhanced Movement System

8/CA.8 has
now consumed
26 of its 30 FF

Enhanced Movement System



8/CA.8 starts with 30 FF.

Space Centurions X

By Ivan Travnicek

Manual of Rules

